1991-92 AUTOMATIC TRANSMISSIONS

Chrysler Motors A-413/30TH & A-670/31TH Overhaul

APPLICATION

CHRYSLER A-413/30TH & A-670/31TH APPLICATION

Application	Transaxle
Chrysler	
LeBaron Convertible/Coupe (2.5L)	A-413 (30TH)
LeBaron Convertible/Coupe (2.5L Turbo)	A-413 (30TH) or A-670 (31TH)
LeBaron Convertible/Coupe (3.0L)	A-670 (31TH)
LeBaron Sedan (2.5L)	A-413 (30TH)
LeBaron Sedan (3.0L)	A-670 (31TH)
Dodge	
Caravan 2.5L	A-413 (30TH)
Caravan 3.0L & Grand Caravan 3.0L	A-670 (31TH)
Daytona 2.5L	A-413 (30TH)
Dynasty 2.5L	A-413 (30TH)
Dynasty 3.0L	A-670 (31TH)
Shadow 2.2L & 2.5L	A-413 (30TH)
Shadow 2.5L Turbo	A-413 (30TH) or A-670 (31TH)
Spirit 2.5L & 2.5L Turbo	A-413 (30TH) or A-670 (31TH)
Plymouth	
Acclaim 2.5L	A-413 (30TH)
Sundance 2.2L & 2.5L	A-413 (30TH)
Sundance 2.5L Turbo	A-413 (30TH) or A-670 (31TH)
Voyager 2.5L	A-413 (30TH)
Voyager 3.0L & Grand Voyager 3.0L	A-670 (31TH)

IDENTIFICATION

A Transaxle Identification Number (TIN) is stamped on a boss, located on transaxle housing. Each transaxle contains an assembly part number which must be referenced when ordering transaxle replacement parts. Assembly part number is located on a pad just above oil pan at rear of transaxle.

DESCRIPTION

Automatic transaxle combines a torque converter, fully automatic 3-speed transaxle, final drive gearing and

differential into a front wheel drive system. Transaxle consists of 2 multiple-disc clutches, an overrunning clutch, 2 servos, hydraulic accumulator, 2 bands and 2 planetary gear sets to provide 3 forward gear ratios and one reverse gear.

A lock-up type torque converter is used. Lock-up mode is activated when the Single Board Engine Controller (SBEC) provides voltage to lock-up solenoid on the valve body.

Front and rear clutch pistons and both servo pistons are actuated hydraulically to engage the clutches and apply the bands. Pistons are released by spring pressure when hydraulic pressure is released. On 2-3 upshifts, kickdown servo piston is released by spring tension and hydraulic pressure. Accumulator controls hydraulic pressure on apply side of kickdown-servo during 1-2 upshift, cushioning kickdown band application.

LUBRICATION & ADJUSTMENTS

See appropriate AUTO TRANSMISSION SERVICING article in TRANSMISSION SERVICING.

ON-VEHICLE SERVICE

The following components can be serviced on the vehicle:

- Distance sensor and speedometer pinion gear
- Governor assembly
- Neutral start/back-up light switch
- Valve body

See proper component under REMOVAL & INSTALLATION.

OIL COOLER FLUSHING

CAUTION: Whenever transaxle failure exists, oil cooler must be flushed and torque converter replaced. If vehicle is equipped with 2 oil coolers, one in radiator tank and one in front of radiator, flush oil coolers separately. DO NOT attempt to flush both oil coolers at one time.

1. Disconnect oil cooler lines at transaxle. Using hand-held suction gun filled with solvent, force solvent into oil cooler return line until solvent flows from oil cooler supply line. See **Fig. 1** .
2. Continue flushing oil cooler until solvent is clear and no sign of contamination exists. Once no contamination exists, apply compressed air on oil cooler return line in light applications until remaining solvent is blown from oil cooler and oil cooler lines.
3. Pump at lease one quart of Mopar ATF Plus-Type 7176 though oil cooler to ensure oil cooler is free of solvent. Replace oil cooler if fluid does not flow freely through oil cooler.

OIL COOLER FLOW CHECK

1. With transaxle filled to proper fluid level, disconnect oil cooler return line from transaxle. See **Fig. 1** .

Place container under oil cooler return line.

2. Apply parking brake. Start engine and allow to idle. Place gearshift in Neutral. Check fluid flow from oil cooler return line. If fluid flow is intermittent or takes more than 20 seconds to obtain one quart, replace oil cooler. Reconnect oil cooler return line and fill fluid to proper level.

CAUTION: DO NOT obtain more than one quart of fluid, or transaxle may be damaged.

TROUBLE SHOOTING

OVERVIEW

Transaxle malfunctions may be caused by poor engine performance improper adjustments or failure of hydraulic, mechanical or electronic components. Always begin by checking fluid level, fluid condition and shift linkage or cable adjustment. Perform road test to determine if problem has been corrected. If problem still exists, several tests must be performed on transaxle. See **TESTING** in this article.

TRANSAXLE

Buzzing Noise

- Aerated fluid
- Low fluid level
- Overrunning clutch inner race damaged
- Valve body malfunction or leakage

Delayed Engagement From Neutral To Drive

- Aerated fluid
- Defective oil pump
- Engine idle speed too low
- Hydraulic pressure too low
- In correct shift linkage or cable adjustment
- Low fluid level
- Restricted oil filter
- Valve body malfunction or leakage
- Worn or broken input shaft seal rings
- Worn or broken reaction shaft support seal rings
- Worn or faulty front clutch
- Worn or faulty rear clutch

Delayed Engagement From Neutral To Reverse

- Aerated fluid
- Defective low-reverse servo, band or linkage malfunction
- Defective oil pump
- Engine idle speed too low
- Hydraulic pressure too low
- Improper low-reverse band adjustment
- Low fluid level
- Restricted oil filter
- Valve body malfunction or leakage
- Worn or broken input shaft seal rings
- Worn or broken reaction shaft support seal rings
- Worn or faulty front clutch

Delayed Upshift

- Governor malfunction
- Governor support seal rings broken or worn
- Incorrect throttle linkage adjustment
- Improper engine performance
- Kickdown servo band or linkage malfunction
- Worn or broken reaction shaft support seal rings
- Worn or faulty front clutch

Drags Or Links

- Kickdown band adjustment too tight
- Low-reverse band defective
- Overrunning clutch worn, broken or seized
- Planetary gear sets broken or seized

Grating, Scraping Or growling Noise

- Drive shaft bushings worn or damaged
- Improper kickdown band adjustment
- Low-reverse band defective
- Overrunning clutch worn, broken or seized
- Planetary gear sets broken or seized

Hard To Fill, Oil Blows Out Filler Hole

- Aerated fluid

- High fluid level
- Restricted oil filter

Harsh Engagement From Neutral To Drive

- Engine idle too high
- Hydraulic pressure too high
- Improper engine performance
- Valve body malfunction or leakage
- Worn or faulty rear clutch

Harsh Engagement From Neutral To Reverse

- Defective low-reverse servo, band or linkage malfunction
- Engine idle too high
- Hydraulic pressure too high
- Improper engine performance
- Improper low-reverse band adjustment
- Worn or faulty rear clutch

Harsh Upshift

- Hydraulic pressure too high
- Hydraulic pressure too low
- Incorrect throttle linkage adjustment
- Improper engine performance
- Kickdown band out of adjustment

No Drive In Any Position

- Faulty oil pump
- Hydraulic pressure too low
- Low fluid level
- Planetary gear sets broken or seized
- Restricted oil filter
- Valve body malfunction or leakage

No Kickdown Or Normal Downshift

- Governor malfunction
- Incorrect throttle linkage adjustment
- Kickdown servo band or linkage malfunction

- Valve body malfunction or leakage

No Lock-Up

- Aerated fluid
- Faulty oil pump
- Hydraulic pressure too low
- Low fluid level
- Stuck switch valve
- Valve body malfunction or leakage
- Worn or broken input shaft seal rings

No Upshift

- Governor malfunction
- Governor support seal ring broken or worn
- Hydraulic pressure too low
- Improper engine performance
- Incorrect shift linkage or cable adjustment
- Incorrect throttle linkage adjustment
- Kickdown servo band or linkage malfunction
- Low fluid level
- Valve body malfunction or leakage
- Worn or broken reaction shaft support seal rings
- Worn or faulty front clutch

Runaway Upshift

- Aerated fluid
- Hydraulic pressure too low
- Incorrect throttle linkage adjustment
- Kickdown servo band or linkage malfunction
- Low fluid level
- Restricted oil filter
- Valve body malfunction or leakage
- Worn or broken reaction shaft support seal rings
- Worn or faulty front clutch

Shifts Erratic

- Aerated fluid

- Faulty oil pump
- Governor malfunction
- Governor support seal rings broken or worn
- Hydraulic pressure too low
- Improper engine performance
- Incorrect shift linkage or cable adjustment
- Incorrect throttle linkage adjustment
- Kickdown servo band or linkage malfunction
- Low fluid level
- Restricted oil filter
- Valve body malfunction or leakage
- Worn or broken governor support seal rings
- Worn or broken reaction shaft support seal rings
- Worn or faulty front clutch

Slips In All Positions

- Aerated fluids
- Faulty oil pump
- Hydraulic pressure too low
- Low fluid level
- Restricted oil filter
- Valve body malfunction or leakage
- Worn or broken input shaft seal rings

Slips In Drive Positions

- Aerated fluid
- Faulty oil pump
- Hydraulic pressure too low
- Incorrect shift linkage or cable adjustment
- Incorrect throttle linkage adjustment
- Low fluid level
- Overrunning clutch not holding
- Overrunning clutch worn, broken or seized
- Restricted oil filter
- Valve body malfunction or leakage
- Worn or broken input shaft seal rings
- Worn or faulty rear clutch

Slips In Reverse Only

- Aerated fluid
- Defective low-reverse servo, band or linkage malfunction
- Faulty oil pump
- Hydraulic pressure too low
- Improper low-reverse band adjustment
- Incorrect shift linkage or cable adjustment
- Low fluid level
- Valve body malfunction or leakage
- Worn or broken reaction shaft support seal rings
- Worn or faulty front clutch

Transaxle Overheats

- Engine idle speed too high
- Faulty cooling system
- Faulty oil pump
- Hydraulic pressure too low
- Incorrect shift linkage or cable adjustment
- Insufficient clutch plate clearance
- kickdown band adjustment too tight
- Low fluid level
- Stuck switch valve

Vehicle Moves In Neutral

- Incorrect shift linkage or cable adjustment
- Insufficient clutch plate clearance
- Rear clutch dragging
- Valve body malfunction or leakage
- Worn or faulty rear clutch

Vehicle Will Not Move In All Forward Positions

- Hydraulic pressure too low
- Low fluid level
- Overrunning clutch not holding
- Overrunning clutch worn, broken or seized
- Planetary gear sets broken or seized
- Valve body malfunction or leakage

- Worn or broken input shaft seal ring
- Worn or faulty rear clutch

Vehicle Will Not Move In Reverse

- Hydraulic pressure too low
- Improper low-reverse band adjustment
- Incorrect shift linkage or cable adjustment
- Low-reverse servo, band or linkage malfunction
- Planetary gear sets broken or seized
- Valve body malfunction or leakage
- Worn or broken reaction shift support seal rings
- Worn or faulty front clutch
- Worn or faulty rear clutch

3-2 Kickdown Runaway

- Aerated fluid
- Hydraulic pressure too low
- Improper kickdown band adjustment
- Incorrect throttle linkage adjustment
- Kickdown servo band or linkage malfunction
- Low fluid level
- Valve body malfunction or leakage
- Worn or broken governor support seal rings
- Worn or faulty front clutch

ELECTRONIC TESTING

TORQUE CONVERTER CLUTCH ELECTRONIC LOCK-UP

See AUTO TRANS DIAGNOSIS - ELECTRONIC CONTROLS article in AUTO TRANS DIAGNOSIS for information on torque converter clutch testing and diagnosis.

TESTING

ROAD TEST

1. Ensure shift linkage or cable is properly adjusted, fluid level and condition are okay. Add fluid and adjust shift linkage or cable as needed.
2. Road test vehicle, operating transaxle in each gear position. Check for slipping and any variation in shifting.

3. If vehicle operates properly at highway speeds, but has poor acceleration, torque converter stator clutch may be slipping. If acceleration through all gears is normal, but high throttle opening is required to maintain highway speeds, torque converter stator clutch may be seized. Torque converter must be replaced if stator clutch is defective.
4. Slipping or flare-up in any gear usually indicates clutch, band, or overrunning clutch problems. The slipping clutch or band in a particular gear can usually be identified by noting transaxle operation in other selector position and comparing which internal units are applied in those positions. See CLUTCH & BAND APPLICATION table.

CLUTCH & BAND APPLICATION

Selector Lever Position	(1) Elements In Use
"D" (Drive)	
1st Gear	Rear & Overrunning Clutch
2nd Gear	Rear Clutch & Kickdown Band
3rd Gear	Front, Rear & Lock-Up Clutch
"2" (Second)	
1st Gear	Rear & Overrunning Clutch
2nd Gear	Rear Clutch & Kickdown Band
"1" (Low)	
1st Gear	Rear Clutch & Low-Reverse Band
"R" (Reverse)	Front Clutch & Low-Reverse Band
"N" Or "P" (Neutral Or Park)	All Clutches & Bands Released Or Ineffective
(1) Kickdown band is the front band and low-reverse is the rear band.	

5. Rear clutch is applied in Drive (1st) and Low gear. Also overrunning clutch is applied in Drive (1st) and low-reverse band is applied in Low gear. If transaxle slips in Drive (1st) gear, but does not slip in Low gear, overrunning clutch is defective. If transaxle sips in any 2 forward gears, rear clutch is slipping.
6. If transaxle slips in "D" (3rd gear), either front or rear clutch are slipping. Select another gear which uses one of these clutches and determine which clutch is slipping. See **CLUTCH & BAND APPLICATION** . If transaxle also slips in Reverse, front clutch is slipping. If it does not slip in Reverse, rear clutch is slipping.
7. Process of elimination can be used to detect any unit which slips and to confirm proper operation of good

units. However, although road test analysis can usually diagnose slipping units, the actual malfunction usually cannot be decided. Practically any condition can be caused by leaking hydraulic circuits or sticking valves. Hydraulic pressure tests should be performed on transaxle.

TORQUE CONVERTER STALL TEST

CAUTION: Manufacturer does not recommend performing torque converter stall test.

HYDRAULIC LINE PRESSURE TEST

Pressure Test Preparation

1. Ensure fluid level and condition are okay. Add fluid and adjust control cable as needed.
2. Ensure fluid is at normal operating temperature of 150-200°F (66-93°C). Install tachometer. Raise vehicle on hoist, allowing front wheels to rotate freely. Disconnect throttle and shift cable or linkage at transaxle so levers can be operated from below vehicle.

NOTE: A 150 psi (11 kg/cm^2) pressure gauge is required for checking all clutches except reverse clutch. A 300 psi (21 kg/cm^2) pressure gauge is required for checking reverse clutch.

Selector Lever In Low (1st) Gear

1. Remove plugs and install pressure gauge in line pressure and low-reverse pressure taps. See **Fig. 1** .
2. Move selector lever on transaxle to fully rear ward position to gearshift "1" position. Read pressure on both gauges as Throttle Valve (T.V.) lever on transaxle is moved from fully clockwise position to fully counterclockwise position.
3. Line pressure should be 52-58 psi (3.6-4.1 kg/cm^2) with T.V. lever fully clockwise and should gradually increase to 80-88 psi (5.6-6.2 kg/cm^2) as T.V. lever is moved counterclockwise. Low-reverse pressure should be within 3 psi (.2 kg/cm^2) of line pressure.
4. If line pressure is not within specification, adjust line pressure. See **HYDRAULIC PRESSURE ADJUSTMENTS** . If proper line pressure still cannot be obtained, check for defective components and hydraulic circuit.
5. This test oil pump output, pressure regulation, condition of rear clutch, and hydraulic circuits. Remove pressure gauges and install plugs. Tighten plugs to specification. See **TORQUE SPECIFICATIONS** .

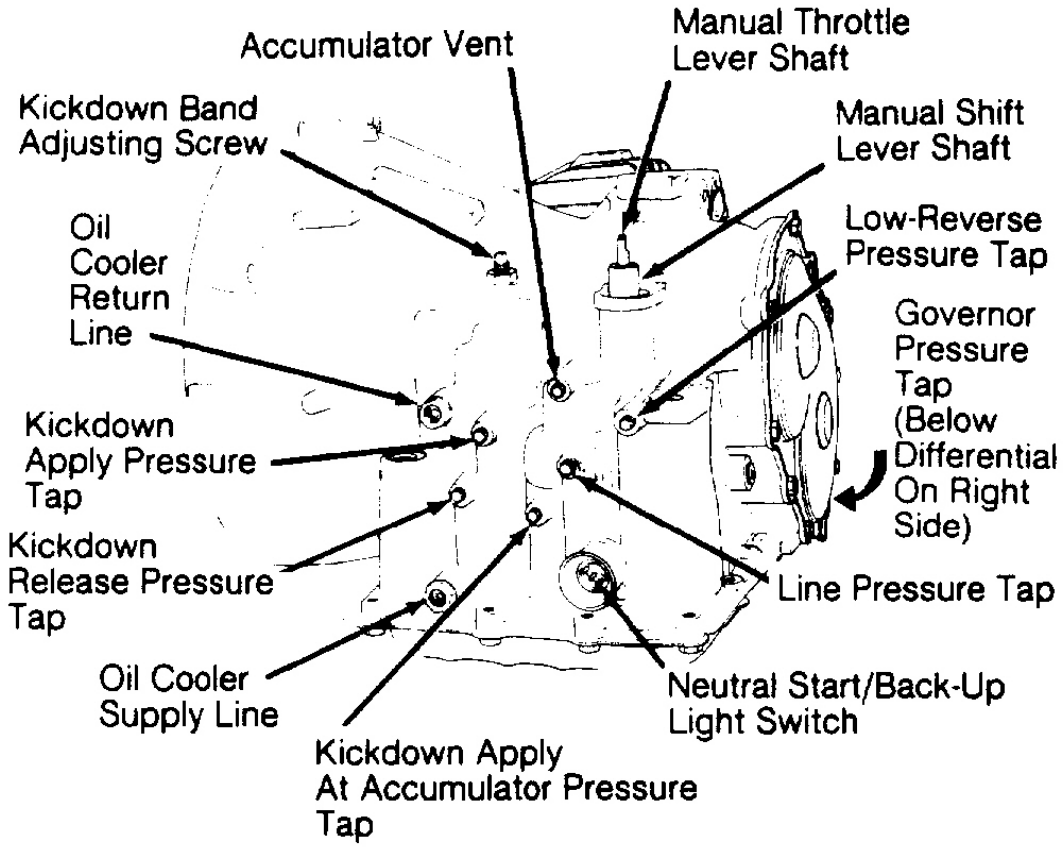


Fig. 1: Identifying Pressure Taps, Oil Cooler Lines & Neutral Start/Back-Up Light Switch
Courtesy of CHRYSLER MOTORS

Selector Lever In "2" (2nd) Gear

1. Remove plug and install pressure gauge in line pressure tap. Install "T" connection and pressure gauge in oil cooler supply line fitting at transaxle so lubrication pressure can be read. See **Fig. 1** .
2. Start engine and operate at 1000 RPM. Move selector lever on transaxle one detent forward from fully rearward position to gearshift "2" position.
3. Read pressures on both gauges as T.V lever on transaxle is moved from fully clockwise position to fully counterclockwise position.
4. Line pressure should be 52-58 psi (3.6-4.1 kg/cm^2) with T.V. lever fully clockwise and should gradually increase to 80-88 psi (5.6-6.2 kg/cm^2) as T.V. lever is moved counterclockwise.
5. If line pressure is not within specification, adjust line pressure. See **HYDRAULIC PRESSURE ADJUSTMENTS** . If proper line pressure still cannot be obtained, check for defective components and hydraulic circuit.
6. Lubrication pressure should be 10-25 psi (.7-1.8 kg/cm^2) with T.V. lever fully clockwise and 10-35 psi

(.7-2.5 kg/cm^2) with T.V. lever fully counterclockwise.

7. This tests oil pump output, pressure regulation, condition or rear clutch, and hydraulic circuits. Remove pressure gauges and install plug. Tighten plug to specifications. See **TORQUE SPECIFICATIONS** . Reconnect oil cooler line.

Selector Lever In "D" (Drive) Gear

1. Remove plugs and install pressure gauge in line pressure and kickdown release pressure taps. See **Fig. 1** . Start engine and operate at 1600 RPM.
2. Move selector lever on transaxle 2 detents forward from fully rearward position to gearshift "D" position. Read pressures on both gauges as T.V. lever on transaxle is moved from fully clockwise position to fully counterclockwise position.
3. Line pressure should be 52-58 psi (3.6-4.1 kg/cm^2) with T.V. lever fully clockwise and should gradually increase to 80-88 psi (5.6-6.2 kg/cm^2) as T.V. lever is moved counterclockwise.
4. If line pressure is not within specification, adjust line pressure. See **HYDRAULIC PRESSURE ADJUSTMENTS** . If proper line pressure still cannot be obtained, check for defective components and hydraulic circuit.
5. Kickdown release is pressurized only in direct drive and should be with 3 psi (.2 kg/cm^2) with T.V. lever fully clockwise and should be within 3 psi (.2 kg/cm^2) of line pressure up to kickdown point. This tests oil pump output, pressure regulation, condition of front and rear clutches, and hydraulic circuits.
6. Remove pressure gauges and install plugs. Tighten plugs to specification. See **TORQUE SPECIFICATIONS** .

Selector Lever In "R" (Reverse) Gear

1. Remove plug and install 300 psi (21 kg/cm^2) pressure gauge in low-reverse pressure tap. See **Fig. 1** . Start engine and operate at 1600 RPM.
2. Move selector lever on transaxle 4 detents forward from fully rearward position to gearshift "R" position. Low-reverse pressure should be 180-220 psi (12.6-15.4 kg/cm^2) with T.V. lever clockwise and should gradually increase to 260-300 psi (18.2-21.0 kg/cm^2) as T.V. lever is moved counterclockwise.
3. This tests oil pump output, pressure regulation condition of front clutch and rear servo hydraulic circuits.
4. Move selector lever on transaxle to "D" position to check that rear servo pressure drops to zero. This tests for leakage into rear servo, doe to case porosity, which can cause reverse band damage. Remove pressure gauge and install plug. Tighten plug to specification. See **TORQUE SPECIFICATIONS** .

Hydraulic Pressure Test Results

1. If proper line pressure is obtained in any test, oil pump and pressure regulator are working properly.
2. Low pressure in "D", "1", and "2", but is correct in "R", indicates leakage in rear clutch circuit.
3. Low pressure in "D" and "R", but is correct in "1", indicates leakage in front clutch circuit.
4. Low pressure in "R" and "1", but is correct in "2", indicates leakage in rear servo circuit.
5. If line pressure is not within specification, adjust line pressure. See **HYDRAULIC PRESSURE ADJUSTMENTS** . If proper line pressure still cannot be obtained, check for defective components and

hydraulic circuit. Low line pressure in all positions indicates a defective oil pump, restricted filter, or stuck pressure regulator valve.

GOVERNOR PRESSURE TEST

NOTE: Governor pressure test should be performed only if transaxle shifts at wrong vehicle speeds with T.V. cable properly adjusted.

1. Remove plug and connect a 150 psi (10.5 kg/cm^2) pressure gauge to governor pressure tap, located below differential cover on right side of transaxle case. See **Fig. 1** .
2. Operate transaxle in 3rd gear and note governor pressure. Governor pressure should respond smoothly with changes in vehicle speed and return to 0-3 psi (0-.2 kg/cm^2) when vehicle is stopped.
3. Pressure greater than 3 psi (.2 kg/cm^2) with vehicle stopped will prevent transaxle from down shifting. Remove pressure gauge and install plug. Tighten plug to specification. See **TORQUE SPECIFICATIONS** .

THROTTLE PRESSURE TEST

1. No pressure tap is provided for testing throttle pressure. Incorrect throttle pressure should only be suspected if part throttle upshift speeds are either delayed or occur too early in relation to vehicle speeds.
2. Engine run-away on either upshifts or downshifts can also be an indication of low throttle pressure setting. Ensure T.V. pressure cable is properly adjusted. See appropriate AUTO TRANS SERVICING article in AUTO TRANS SERVICING section.
3. Throttle pressure can be adjusted if T.V. cable is properly adjusted. See **THROTTLE PRESSURE** under HYDRAULIC PRESSURE ADJUSTMENTS.

CLUTCH & SERVO AIR PRESSURE TEST

NOTE: Inoperative clutches, servos and bands can be located by applying air pressure to appropriate passages in transaxle case.

Test Preparation

Remove valve body. See **VALVE BODY** under REMOVAL & INSTALLATION.

CAUTION: Ensure air supply is free of all dirt and moisture. Using air pressure regulator, adjust air pressure to 30 psi (2.1 kg/cm^2).

Front Clutch

Apply air pressure to front clutch apply passage. See **Fig. 2** . Listen for a dull thud sound to indicate front clutch operation. Maintain air pressure application for a few seconds and check system for excessive oil leaks.

Rear Clutch

1. Apply air pressure to rear clutch apply passage. See **Fig. 2** . Listen for a dull thud sound to indicate rear clutch operation. If dull thud sound is not heard, release air pressure.
2. Place finger tips on clutch housing and reapply air pressure. Movement of clutch piston must be felt if rear clutch is operating. Maintain air pressure application for a few seconds and check system for excessive oil leaks.

Kickdown Servo (Front Band)

Apply air pressure to kickdown servo "on" passage. See **Fig. 2** . Front band should tighten, indicating kickdown servo operation. Release air pressure and note that spring tension on servo piston releases the front band.

Low-Reverse Servo (Rear Band)

Apply air pressure to low-reverse servo apply passage. See **Fig. 2** . Rear band should tighten, indicating low-reverse servo operation. Release air pressure and note that spring tension on servo piston releases the rear band.

NOTE: If clutches and servos operate properly, no upshift or erratic shift conditions indicates valve body is malfunctioning.

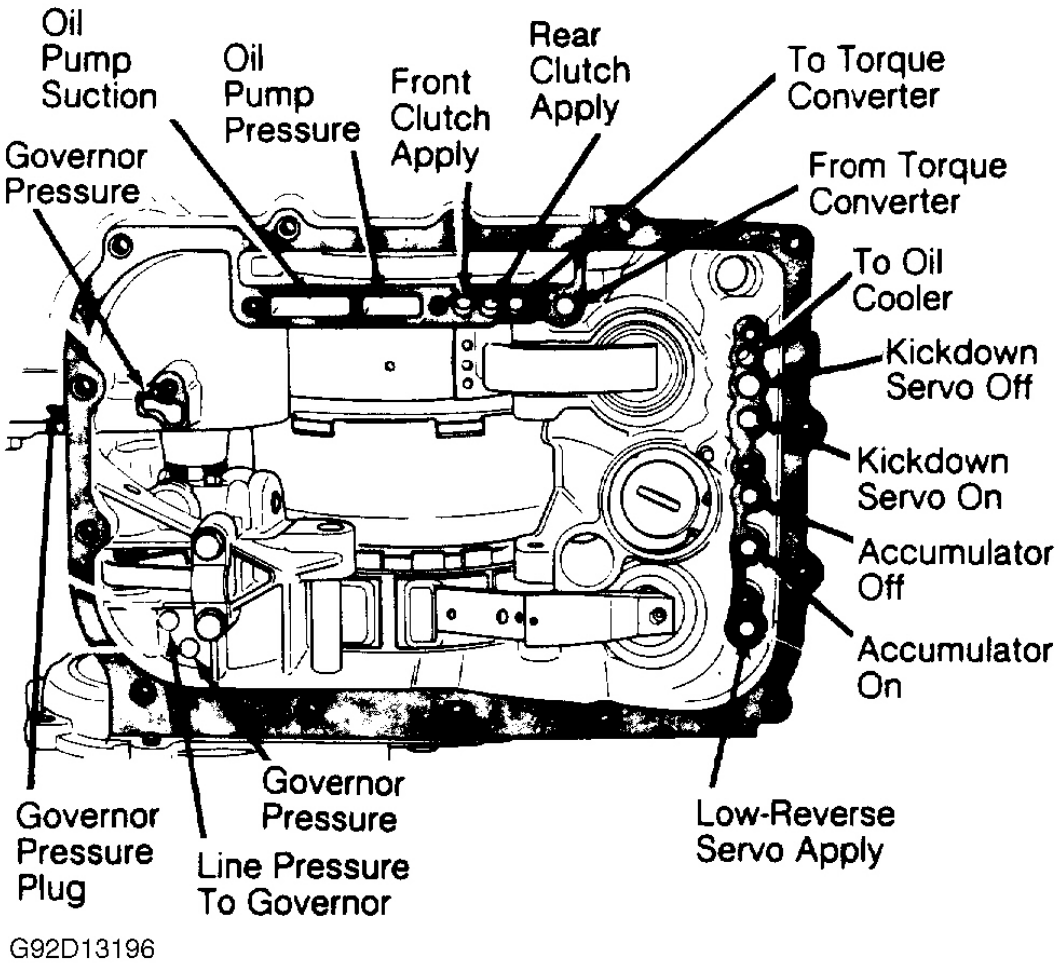


Fig. 2: Identifying Air Pressure Test Passages
Courtesy of CHRYSLER MOTORS

TORQUE CONVERTER FLUID LEAKAGE TEST

NOTE: Fluid around torque converter may originate from engine oil or the transaxle. Ensure transaxle fluid level is correct. Fluid leakage at torque converter may result if fluid level is too high. Transaxle can be checked for leaks using the following method.

Leakage Test Probe

1. Remove torque converter housing dust shield. Clean inside area of torque converter housing using solvent and compressed air. Ensure area is clean and dry.
2. Fabricate leakage test probe using 1/32" sheet metal, 5" (127 mm) long and 1 1/2" (38.1 mm) wide. See **Fig. 3** . Operate engine until transaxle is at normal operating temperature. Install leakage test probe on

torque converter dust shield bolt so leakage test probe is near torque converter. Ensure torque converter does not contact leakage test probe.

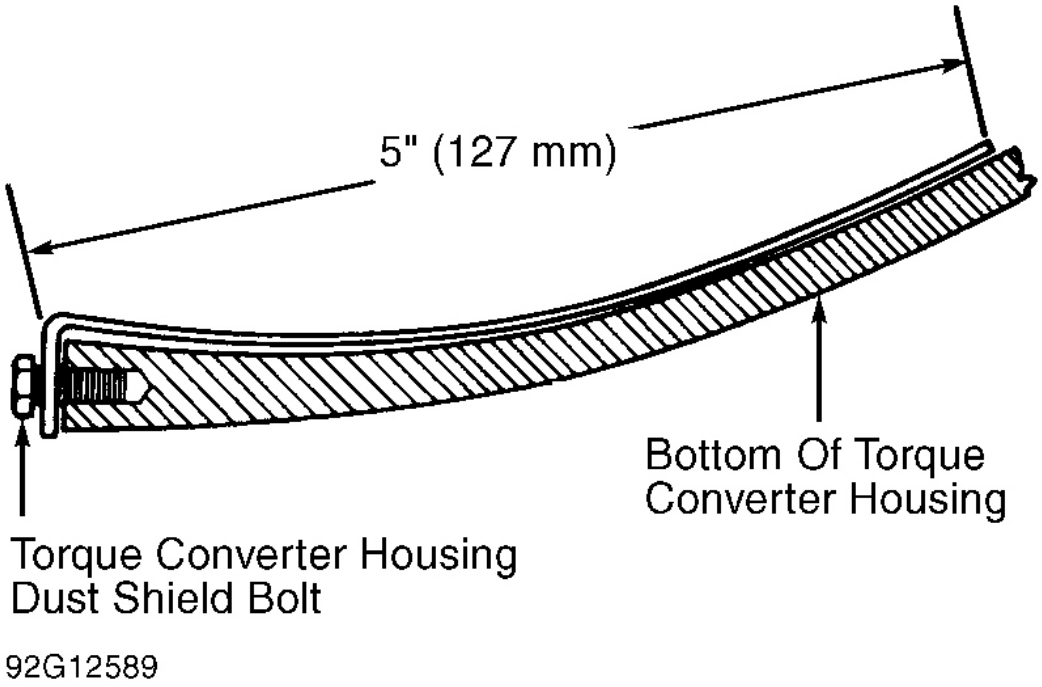


Fig. 3: Fabricating Leakage Test Probe
Courtesy of CHRYSLER MOTORS

3. Start engine and place transaxle in Neutral. Operate engine at 2500 RPM for 2 minutes. Stop engine and remove leakage test probe.
4. If upper surface of leakage test probe is dry, torque converter is not leaking. If upper surface of leakage test probe is wet with ATF, torque converter is leaking. If lower area below leakage test probe is wet with ATF, fluid is coming from around torque converter area.
5. Possible causes of fluid leaks at torque converter areas are:
   - Torque converter hub seal
   - Mispositioned or worn bushing
   - Mispositioned or worn bushing
   - Oil pump housing oil return hole restricted
   - Defective oil pump housing O-ring or oil pump housing
   - Oil pump-to-transaxle case bolts
6. If torque converter is leaking, check for defective welds on outside diameter of torque converter and torque converter hub. Torque converter hub is welded on the inside and weld is not visible. Replace torque converter if a leak exists. **DO NOT** attempt to repair torque converter.

TRANSAXLE CASE PRESSURE TEST

NOTE: Transaxle case, gaskets and oil pump housing can be checked for leaks using following method. Transaxle must be removed to perform transaxle case pressure test.

1. Fabricate torque converter hub seal cup using thin wall tubing and a .125" (3.17 mm) steel disc. See **Fig. 4** . Fabricate torque converter hub seal cup retaining strap using 1/4" x 1 1/4" wide material. See **Fig. 5** .
2. Remove torque converter from transaxle. Plug dipstick tube and oil cooler supply line fitting. Using rotary motion, install torque converter hub seal cup over input shaft and through torque converter hub seal until cup bottoms against gear lugs of oil pump.
3. Install torque converter hub seal cup retaining strap using starter upper hole and opposite bracket hole. Attach hose from Nozzle (C-4080) to oil cooler return line fitting on transaxle case.
4. Using pressure regulator, apply 8-10 psi (.5-.7 kg/cm^2) or air pressure to transaxle case.

CAUTION: DO NOT apply more than 10 psi (.7 kg/cm^2) of air pressure to transaxle case.

5. Coat oil pump and front of transaxle case with soapy water solution. Check for bubbles, indicating a leak in seals, O-rings, gaskets or transaxle case. Release air pressure and remove test equipment. Replace defective components.

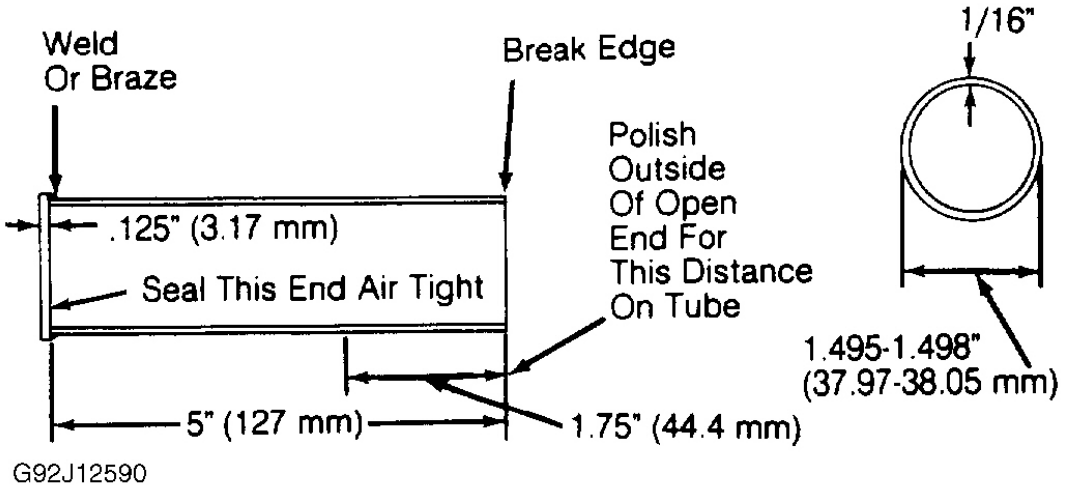


Fig. 4: Fabricating Torque Converter Hub Seal Cup
Courtesy of CHRYSLER MOTORS

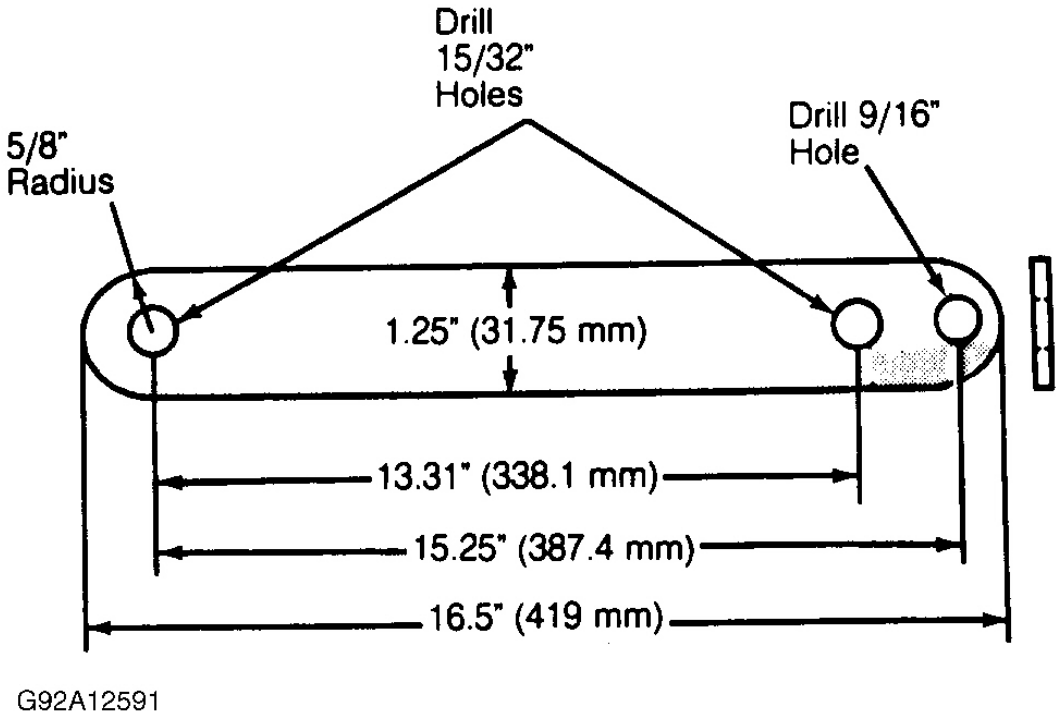


Fig. 5: Fabricating Torque Converter Hub Seal Cup Retaining Strap
Courtesy of CHRYSLER MOTORS

HYDRAULIC PRESSURE ADJUSTMENTS

CAUTION: Throttle pressure MUST NOT be adjusted until T.V. cable adjustment has been checked and adjusted as needed. See appropriate AUTO TRANS SERVICING article in AUTO TRANS SERVICING section. Incorrect throttle pressure setting will cause incorrect line pressure readings even though line pressure adjustment is correct. Always inspect and correct throttle pressure adjustment before adjusting line pressure.

THROTTLE PRESSURE

1. Remove valve body (if necessary). See VALVE BODY under **REMOVAL & INSTALLATION** . Insert gauge pin of Gauge (C-3763) between cam on T.V. lever assembly and kickdown valve. See **Fig. 24** .
2. Push inward on gauge pin and compress kickdown valve against spring until kickdown valve is fully bottomed in valve body.

CAUTION: Ensure spring is fully compressed and kickdown valve is bottomed in valve body.

3. Note location of throttle pressure adjusting screw. See **Fig. 25** . With spring fully compressed, using Adapter (C-4553), rotate throttle pressure adjusting screw until head of adjusting screw contacts tang on T.V. lever assembly. Ensure cam on T.V. lever assembly contacts gauge pin and throttle valve is bottomed in valve body. Remove gauge pin.

CAUTION: Always adjust throttle pressure before adjusting line pressure.

LINE PRESSURE

1. Note location of line pressure adjusting screw. See **Fig. 25** . Rotate line pressure adjusting screw until distance between valve body and inner edge of adjusting screw is approximately 1 5/16".

NOTE: Due to manufacturing tolerances, adjustment can be varied to obtain specified line pressure.

2. Rotating line pressure adjusting screw one revolution will change line pressure approximately 1 2/3 psi. Rotate line pressure adjusting screw counterclockwise to increase line pressure and clockwise to decrease line pressure.

REMOVAL & INSTALLATION

AXLE SHAFTS

See appropriate AXLE SHAFTS - FRONT article in DRIVE AXLES section.

DISTANCE SENSOR & SPEEDOMETER PINION GEAR

Removal

1. Disconnect speedometer cable and electrical connector from distance speed sensor, located on transaxle extension housing. Ensure weather seal remains on electrical connector.
2. Ensure area around distance sensor is clean. Remove retaining bolt and distance sensor. Remove speedometer pinion gear from distance sensor.

Installation

To install, reverse removal procedure using new O-ring on distance sensor. Tighten retaining bolt to specification. See **TORQUE SPECIFICATIONS** .

GOVERNOR ASSEMBLY

NOTE: It is not necessary to remove transfer gear and governor support when servicing governor assembly.

Removal & Installation

1. Remove valve body. See **VALVE BODY** under REMOVAL & INSTALLATION. Remove governor assembly-to-governor support retaining bolts. Remove governor assembly.
2. Ensure governor valves move freely in bores of governor assembly. To install, reverse removal procedure. Tighten retaining bolts to specification. See **TORQUE SPECIFICATIONS** .

NEUTRAL START/BACK-UP LIGHT SWITCH

Removal & Installation

1. Disconnect electrical connector from neutral start/back-up light switch, located on side of transaxle case. See **Fig. 1** .
2. Unscrew and remove neutral start/back-up light switch and seal from transaxle case. Some ATF may drain when switch is removed.
3. To install, reverse removal procedure using seal. Tighten neutral start/back-up light switch to specification. See **TORQUE SPECIFICATIONS** . Adjust ATF level.

TRANSAXLE ASSEMBLY

See appropriate AUTO TRANS REMOVAL & INSTALLATION article in AUTO TRANS SERVICING section.

VALVE BODY

Removal

1. Disconnect linkages or cables on T.V. lever shaft and manual shift lever shafts. See **Fig. 1** . Remove neutral start/back-up light switch. Remove retaining bolts and oil pan.
2. Remove retaining screws, filter assembly and gasket. It may be necessary to disconnect parking pawl rod. See **Fig. 6** . Remove transfer plate/valve body-to-transaxle case bolts. Remove valve body and governor tubes. Note bolt length and location for reassembly reference.

Installation

1. To install, reverse removal procedure. Install valve body bolts in original location and tighten to specification. See **TORQUE SPECIFICATIONS** .
2. Install new filter assembly and gasket. Tighten retaining screws to specification. Apply RTV sealant on oil pan-to-transaxle surface and below head of oil pan bolts before installing. Tighten bolts to specification. See **TORQUE SPECIFICATIONS** . Fill with Mopar ATF PLUS-Type 7176.

TORQUE CONVERTER

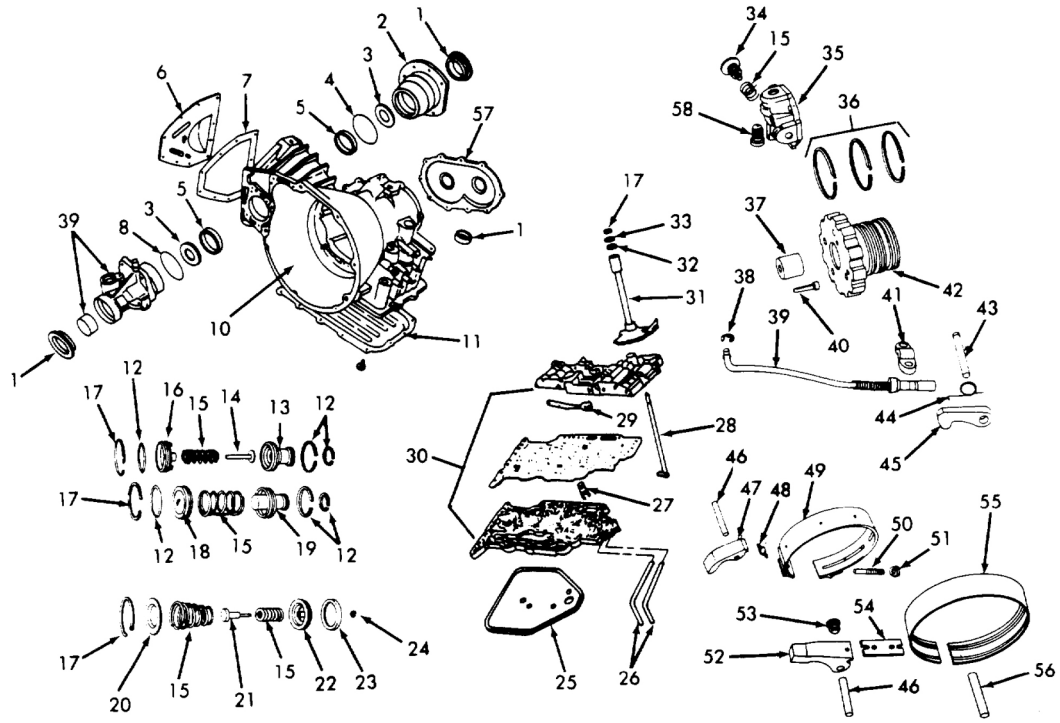
CAUTION: Torque converter is a welded assembly and is not serviceable. If a malfunction occurs or if torque converter becomes contaminated with foreign material, it MUST be replaced. It cannot be flushed or repaired.

TRANSAXLE DISASSEMBLY

VALVE BODY & INTERNAL COMPONENTS

NOTE: Input shaft end play should be measured before transaxle disassembly. This indicates if thrust washer located between input and output shaft may need to be changed.

1. Remove torque converter. Attach dial indicator to transaxle case with dial indicator stem seated against end of input shaft.
2. Move input shaft inward and zero dial indicator. Pull input shaft outward and note reading. Input shaft end play should be .008-.060" (.20-1.52 mm). Record input shaft end play for reassembly reference.
3. Remove neutral start/back-up light switch. Remove retaining bolts and oil pan. Remove retaining screws, filter assembly and gasket. Remove clip and parking pawl rod. See **Fig. 6** . Remove transfer plate/valve body-to-transaxle case bolts, valve body and governor tubes. Note bolt length and location for reassembly reference.
4. Loosen lock nut and tighten kickdown band adjusting screw before removing oil pump. See **Fig. 1** . Remove oil pump retaining bolts. Install Adapters (L-4437) and slide hammer pullers on opposite sides of oil pump. Remove oil pump, gasket and thrust washer from transaxle case.
5. Loosen kickdown band adjusting screw. Remove kickdown band and kickdown band strut. Remove front clutch assembly. Remove thrust washer (located on oil pump end of input shaft), input shaft, rear clutch retainer and rear clutch assembly. See **Fig. 7** .
6. Remove thrust washer located on end of output shaft. This is a selective fit thrust washer that fits between input and output shafts and controls input shaft end play.
7. Remove front planetary gear assembly retaining snap ring from output shaft. Remove front planetary gear assembly. Remove thrust washer located between front planetary gear assembly and sun gear. See **Fig. 7** .
8. Remove sun gear shell with sun gear and plate spacer. See **Fig. 7** . Remove rear planetary gear assembly and thrust washers. There are thrust washers on each side of rear planetary gear assembly.
9. Remove overrunning clutch assembly with 8 rollers and 8 overrunning clutch springs. See **Fig. 7** . Loosen lock nut and low-reverse band adjusting screw. See **Fig. 8** .



1. Oil Seal
2. Differential Bearing Retainer
3. Retainer
4. Selective Spacer Or Shim
5. Bearing Cup
6. Differential Cover
7. Gasket
8. "O" Ring
9. Extension Housing
10. Transaxle Case
11. Oil Pan
12. Seal Ring
13. Kickdown Servo Piston
14. Servo Rod
15. Spring
16. Kickdown Servo Guide
17. Snap Ring
18. Accumulator Plate
19. Accumulator Piston
20. Low-Reverse Servo Spring Retainer
21. Plug
22. Low-Reverse Servo Piston
23. Rubber Seal Ring
24. Retaining Ring
25. Filter Assembly
26. Governor Tubes
27. Regulator Valve Screen
28. Manual Throttle Lever Shaft
29. Detent Assembly
30. Valve Body Assembly
31. Manual Shift Lever Shaft
32. Seal
33. Washer
34. Governor Secondary Valve
35. Governor Body
36. Governor Support Seal Ring
37. Counterweight
38. Clip
39. Parking Pawl Rod
40. Governor Filter
41. Parking Rod Support
42. Governor Support
43. Parking Pawl Shaft
44. Return Spring
45. Parking Pawl
46. Shaft
47. Kickdown Band Lever
48. Kickdown Band Strut
49. Kickdown Band
50. Kickdown Band Adjusting Screw
51. Nut
52. Low-Reverse Band Lever
53. Plug
54. Low-Reverse Band Strut
55. Low-Reverse Band
56. Anchor Pin
57. End Cover
58. Governor Weight

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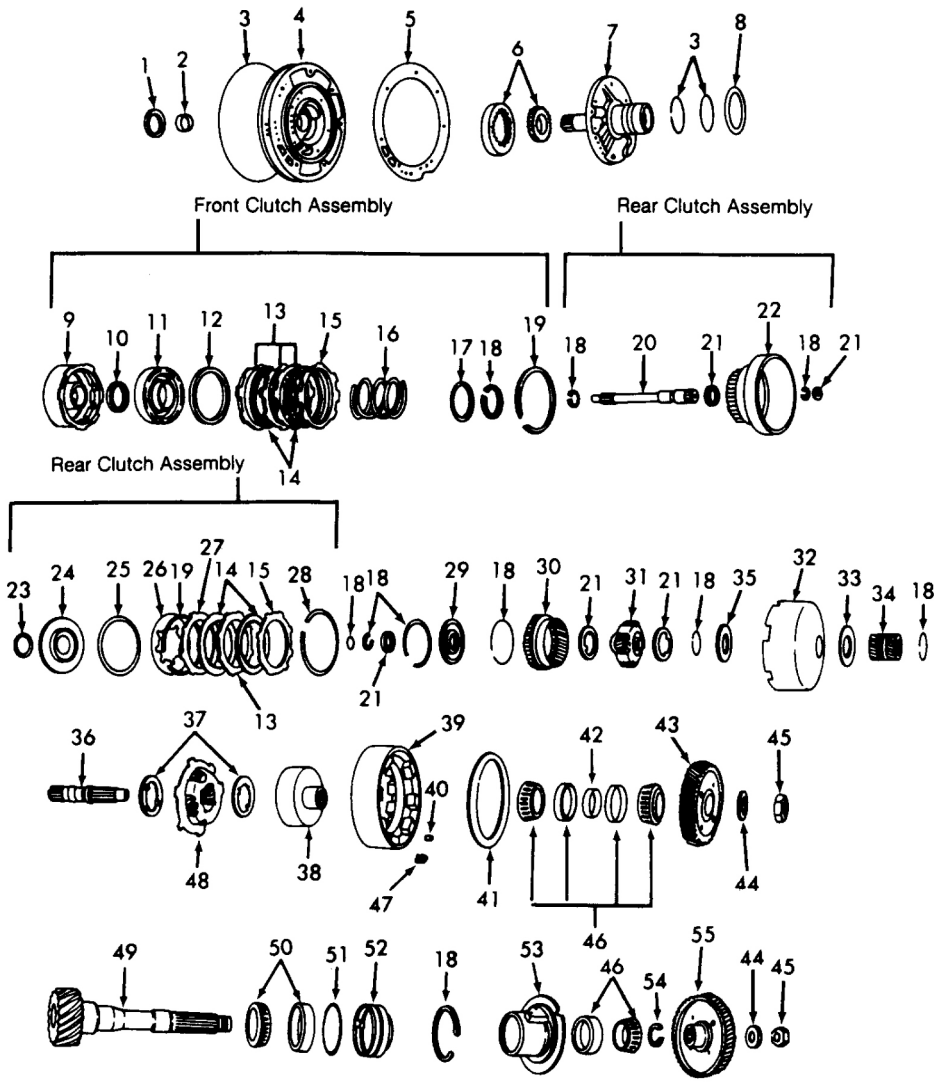
Fig. 6: Exploded View of Transaxle Case & Components
Courtesy of CHRYSLER MOTORS



1. Oil Pump Seal
2. Bushing
3. Seal Ring
4. Oil Pump
5. Gasket
6. Oil Pump Gears
7. Reaction Shaft Support
8. Thrust Washer
9. Front Clutch Retainer
10. Front Clutch Inner Seal
11. Front Clutch Piston
12. Front Clutch Outer Seal
13. Clutch Steel Plate
14. Clutch Disc
15. Reaction Plate
16. Spring
17. Spring Retainer
18. Snap Ring
19. Waved Snap Ring
20. Input Shaft
21. Thrust Washer
22. Rear Clutch Retainer
23. Rear Clutch Inner Seal
24. Rear Clutch Piston
25. Rear Clutch Outer Seal
26. Piston Return Spring
27. Pressure Plate
28. Selective Snap Ring
29. Front Annulus Gear Support
30. Front Annulus Gear
31. Front Planetary Gear Assembly
32. Sun Gear Shell
33. Thrust Plate
34. Sun Gear
35. Plate Spacer
36. Output Shaft
37. Rear Planetary Thrust Washer
38. Rear Annulus Gear
39. Overrunning Clutch Assembly
40. Roller
41. Overrunning Clutch Thrust Washer
42. Selective Spacer Or Shim
43. Output Gear
44. Washer
45. Nut
46. Output Shaft Bearing Assembly
47. Overrunning Clutch Spring
48. Rear Planetary Gear Assembly
49. Transfer Shaft
50. Bearing & Cup
51. "O" Ring
52. Transfer Shaft Bearing Retainer
53. Governor Support Retainer
54. Selective Spacer Or Shim
55. Transfer Gear

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Fig. 7: Exploded View of Transaxle Internal Components
Courtesy of CHRYSLER MOTORS

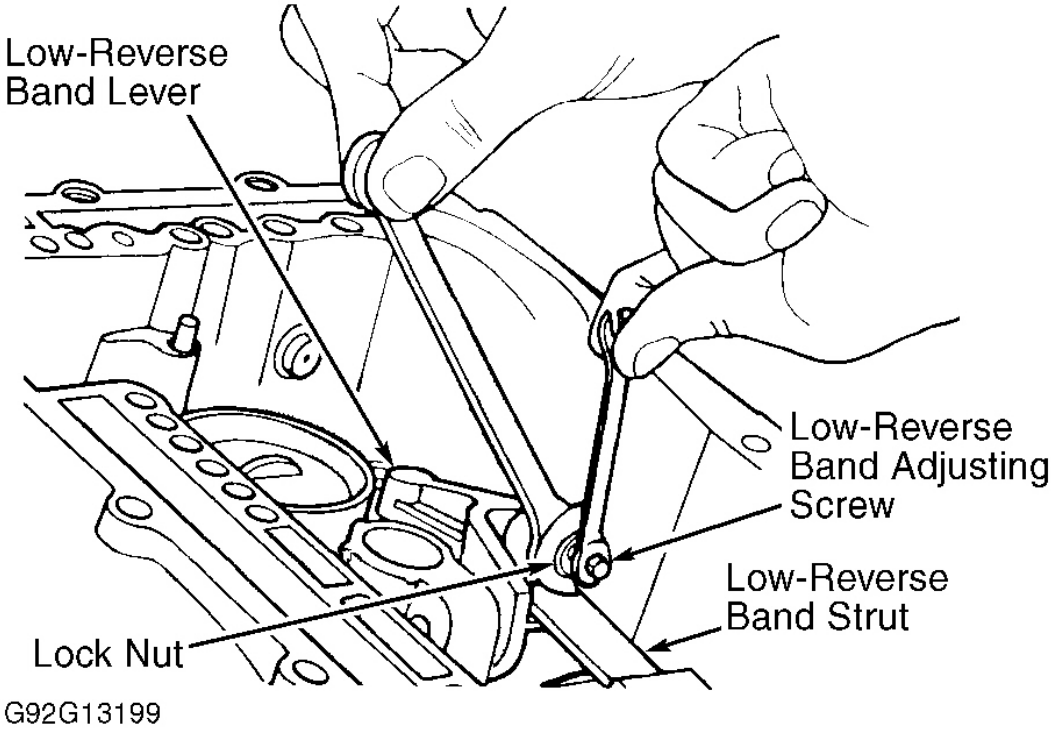


Fig. 8: Identifying Low-Reverse Band Adjusting Screw
Courtesy of CHRYSLER MOTORS

10. Remove low-reverse band and low-reverse band strut. See **Fig. 6** . Remove overrunning clutch thrust washer. Remove retaining bolts and end cover. Using Gear Holder (L-4434), hold transfer gear and remove nut and washer from end of transfer shaft. See **Fig. 7** .
11. Using Puller (L-4407) and Adapter (L-4407), remove transfer gear and selective spacer or shim from transfer shaft. Remove governor support retainer. Remove anchor pin for low-reverse band, located at rear of transaxle, near transfer gear.
12. Slide governor support and governor assembly from transfer shaft. Remove transfer shaft bearing retaining snap ring from transaxle case. Using Puller (C-3752), Adapter (L-4437) and Transfer Shaft Remover/Installer (L-4512), remove transfer shaft bearing retainer and transfer shaft. See **Fig. 9** .

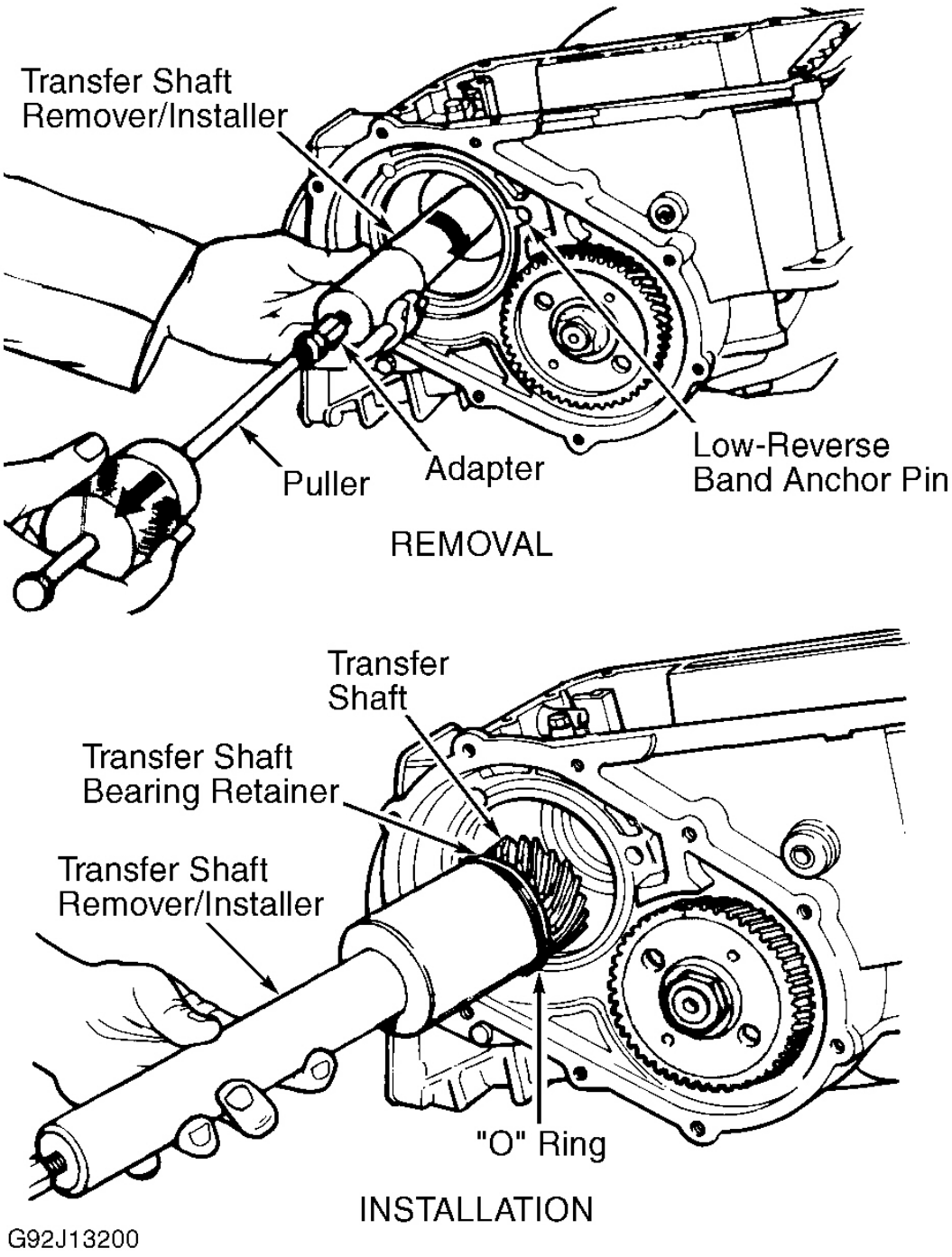


Fig. 9: Removing & Installing Transfer Shaft Bearing Retainer & Transfer Shaft
Courtesy of CHRYSLER MOTORS

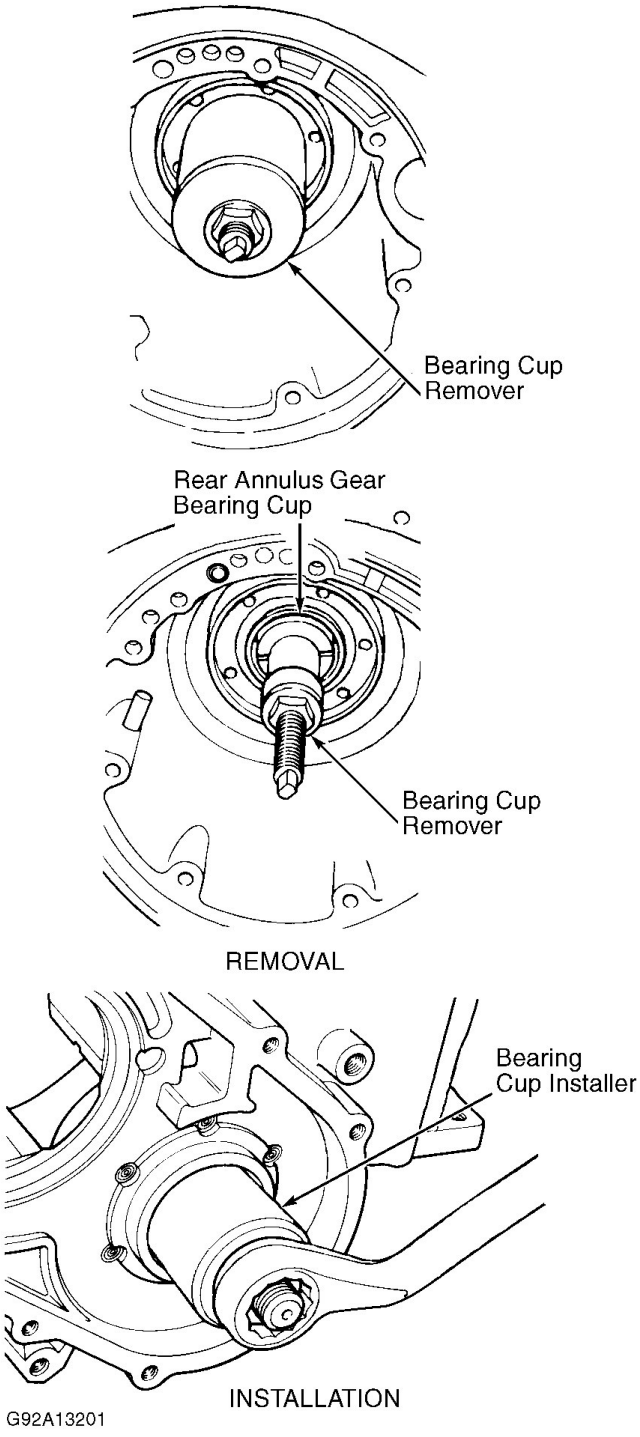
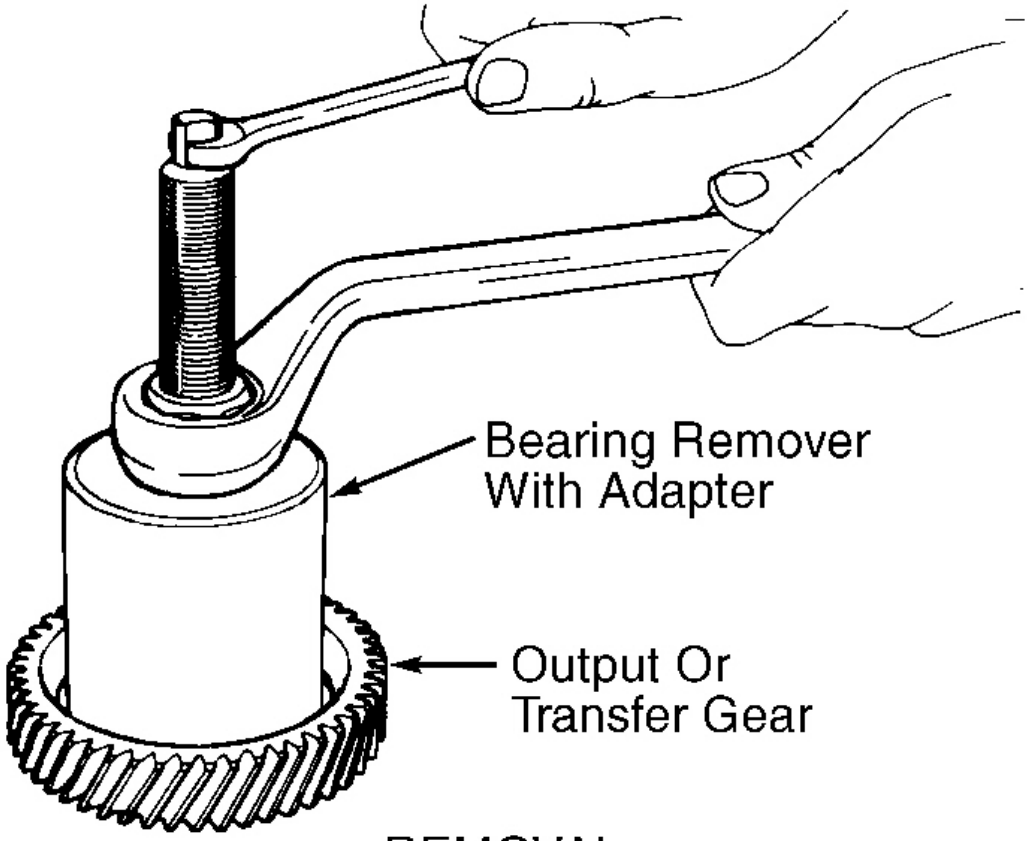
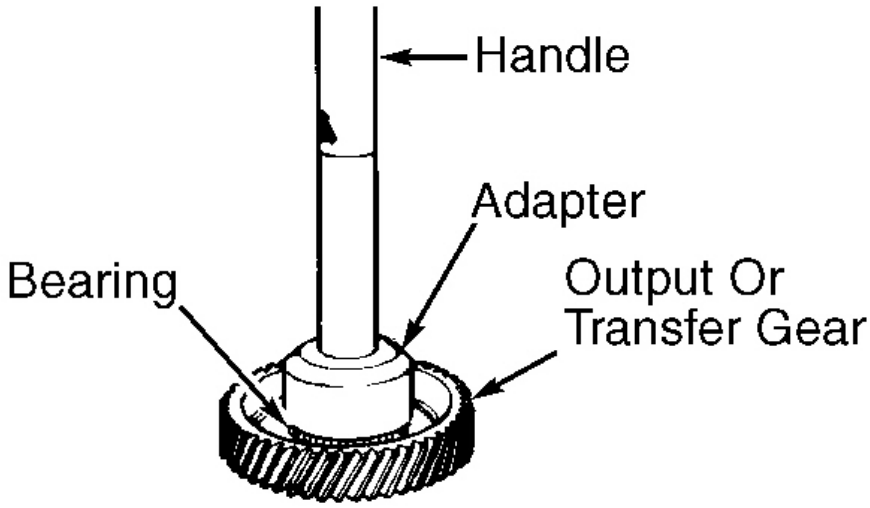


Fig. 10: Removing & Installing Rear Annulus Gear Bearing Cup
Courtesy of CHRYSLER MOTORS



REMOVAL



INSTALLATION

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Fig. 11: Removing & Installing Transfer or Output Gear Bearing
Courtesy of CHRYSLER MOTORS

13. Removing retaining bolts and parking rod support. See **Fig. 6** . Remove parking pawl shaft, parking pawl and return spring. Using gear holder, hold output gear and remove retaining nut and washer from output shaft.
14. Using puller and adapters, remove output gear and selective spacer or shim from output shaft. Remove output shaft and rear annulus gear from inside transaxle case. See **Fig. 7** .
15. If removing output shaft from rear annulus gear, support rear annulus gear in press. Ensure rear annulus gear is supported near center of the gear. Press output shaft from rear annulus gear.
16. If removing rear annulus gear bearing cup from transaxle case, use Bearing Cup Remover (L-4518). See **Fig. 10** .

NOTE: Bearing cup remover used for rear annulus gear bearing cup removal can also be used to remove output shaft bearing cup from rear of transaxle case.

17. If removing bearing cup from governor support, use press, Handle (C-4171) and Adapter (L-4517). If removing bearing from transfer or output gears, use Bearing Remover (L-4406-1) and Adapter (L-4406-3 for transfer gear or L-4406-2 for output gear). See **Fig. 11** .
18. If removing bearing from transfer shaft, use Puller (C-293-A) and Adapter (C-293-52). See fig. 12. If removing bearing cup from transfer shaft bearing retainer, use Bearing Cup Remover (L-4518). See **Fig. 13** . If removing bearing from rear annulus gear, use Puller (L-4406-1) and Adapter (L-4406-2). See **Fig. 14** .

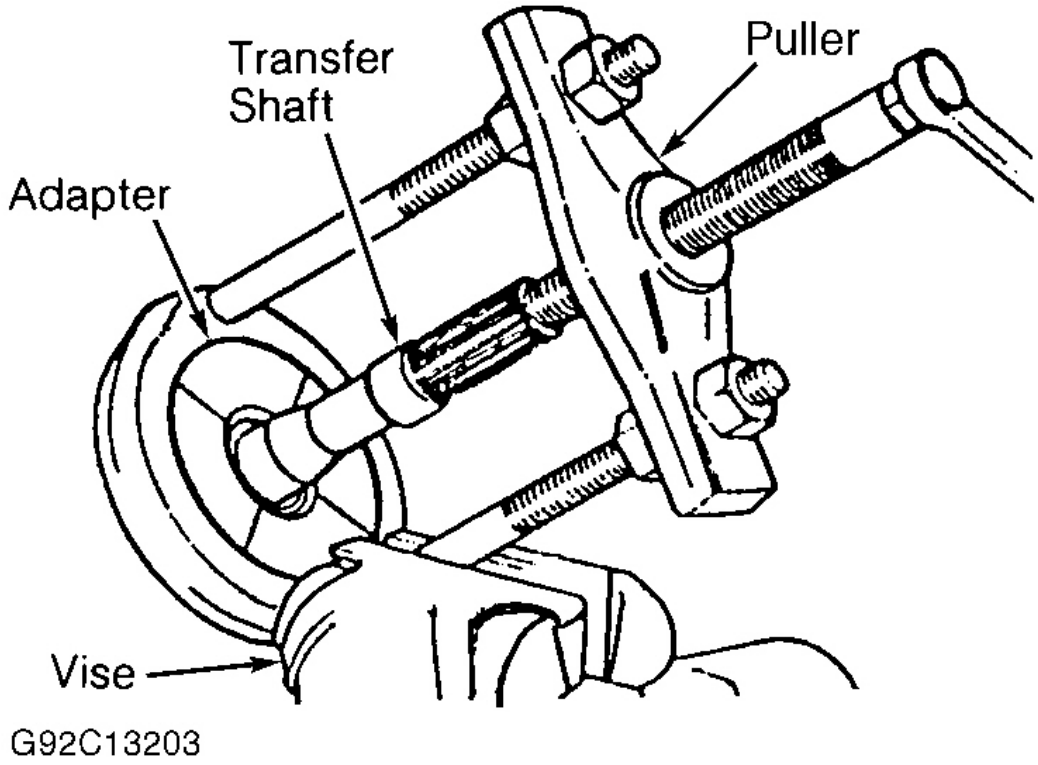


Fig. 12: Removing Transfer Shaft Bearing
Courtesy of CHRYSLER MOTORS

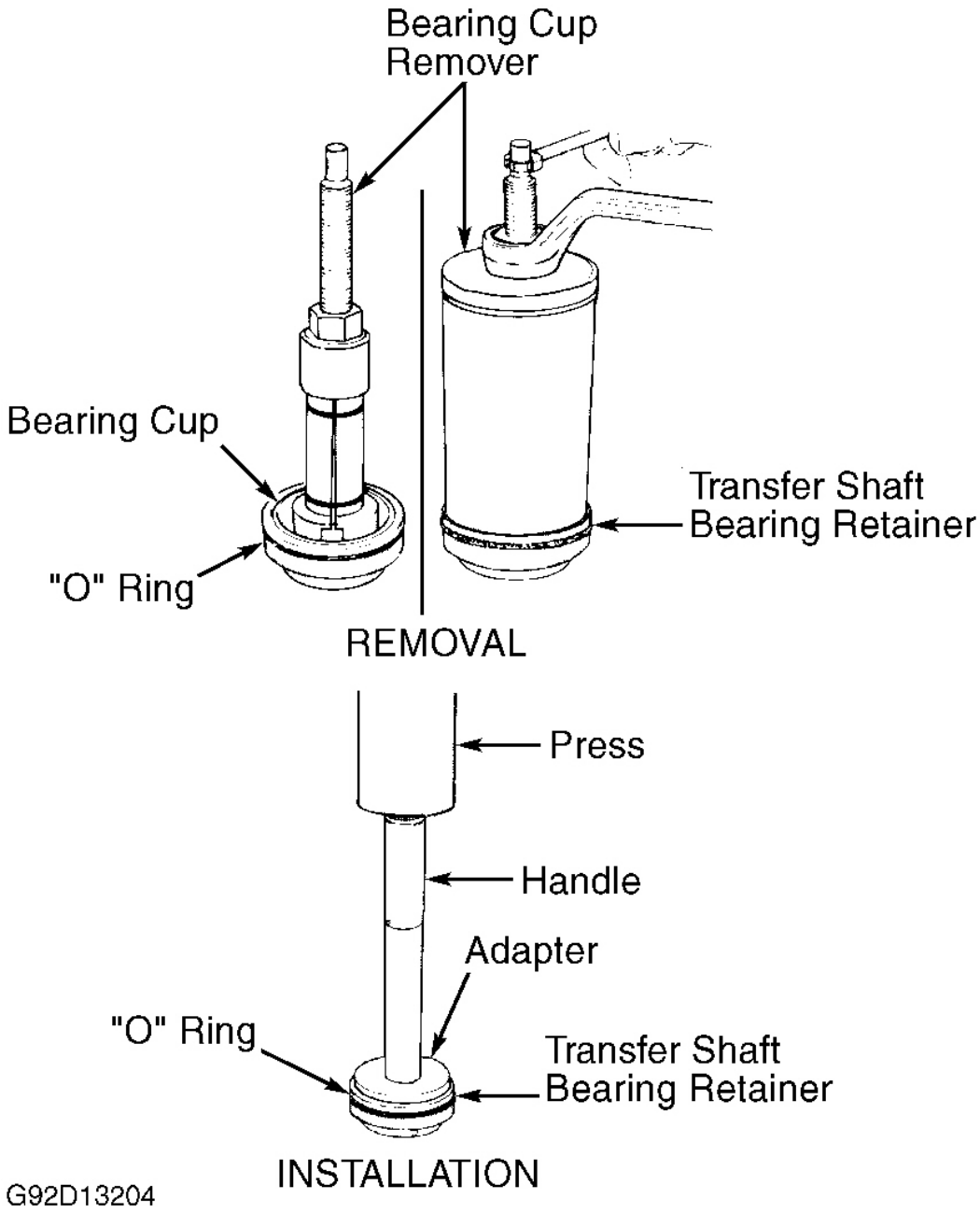


Fig. 13: Removing & Installing Transfer Shaft Bearing Retainer Bearing Cup
Courtesy of CHRYSLER MOTORS

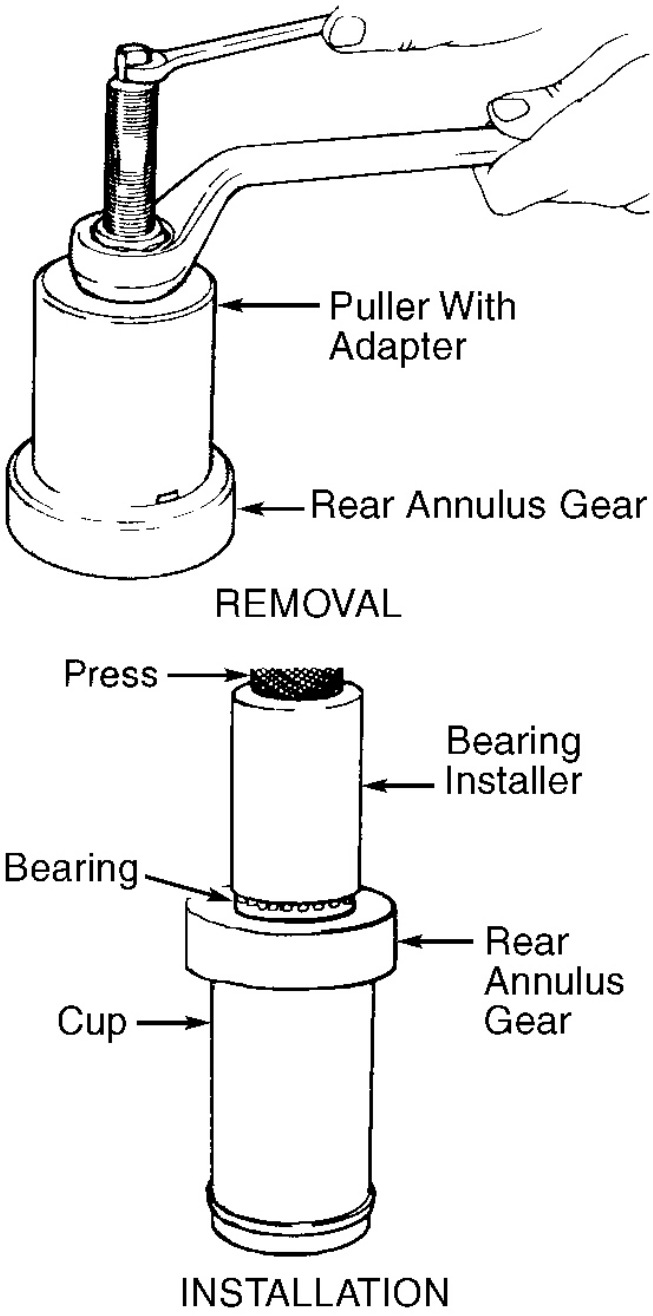
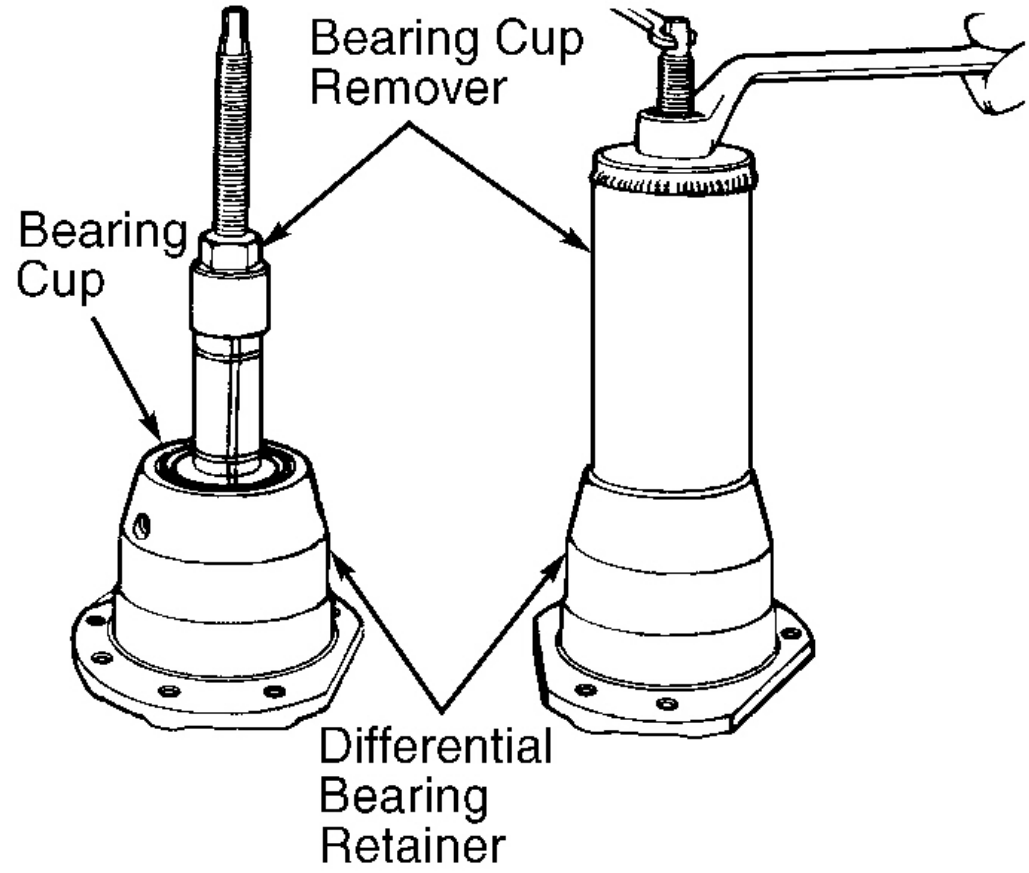
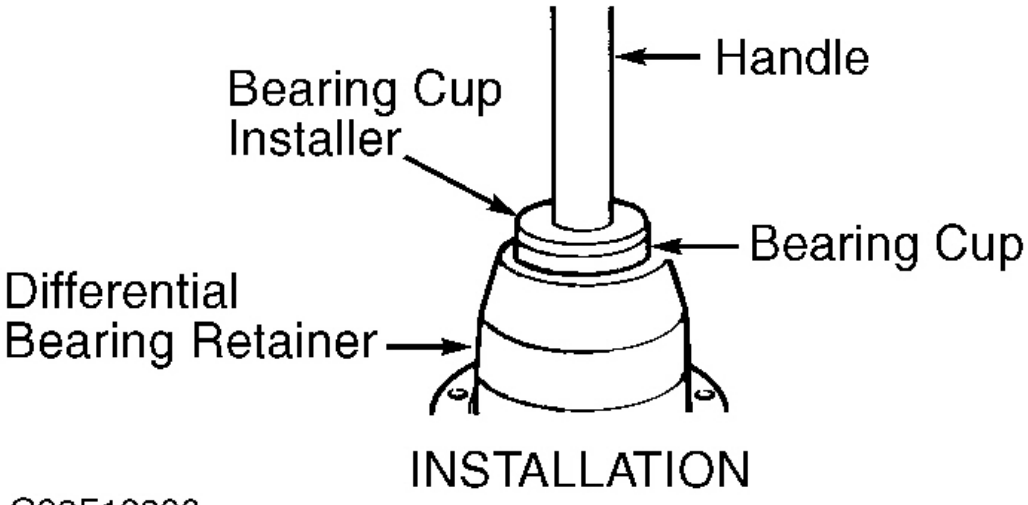


Fig. 14: Removing & Installing Rear Annulus Gear Bearing
Courtesy of CHRYSLER MOTORS



REMOVAL



INSTALLATION

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Fig. 15: Removing & Installing Bearing Cup In Differential Bearing Retainer
Courtesy of CHRYSLER MOTORS

19. To remove differential assembly, remove retaining bolts and differential cover. Remove retaining bolts from differential bearing retainer. See **Fig. 6** . Using Spanner Wrench (L-4435), rotate differential bearing retainer and remove from transaxle case.
20. Remove extension housing retaining bolts. Support differential assembly. Using Spanner Wrench (L-4435), rotate extension housing and remove from transaxle case. Remove differential assembly.
21. Remove oil seals from extension housing and differential bearing retainer. Remove bearing race from extension housing if replacement is required.
22. If removing bearing cup from differential bearing retainer, use Bearing Cup Remover (L-4518). See **Fig. 15** .

CAUTION: DO NOT loose selective spacer or shim located below bearing cup in differential bearing retainer. Selective spacer or shim is used to adjust differential bearing preload.

COMPONENT DISASSEMBLY & REASSEMBLY

DIFFERENTIAL ASSEMBLY

Disassembly

1. Remove side bearings from carrier (if necessary). Remove retaining bolts and ring gear.
2. Side gear end play should be checked before disassembling side gears to determine if different thickness thrust washer is required.
3. Install Shaft (C-4996) in side gear. Install dial indicator. See **Fig. 16** . Move side gear upward and zero dial indicator. Move side gear downward and note side gear end play.

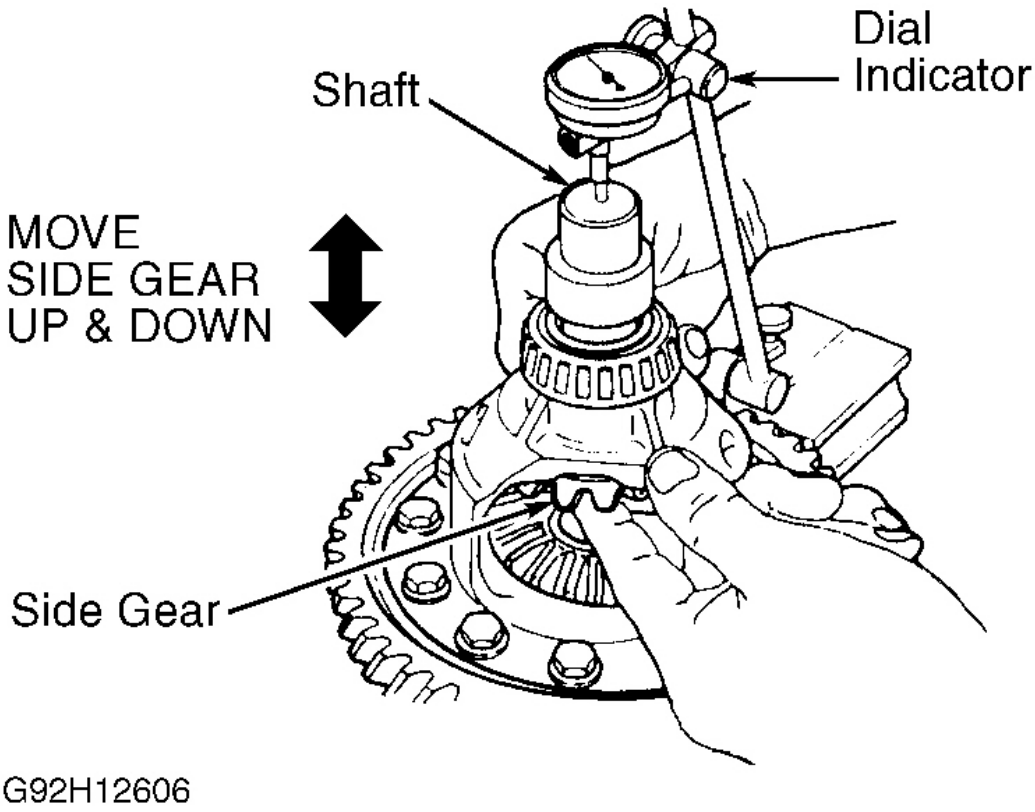


Fig. 16: Checking Side Gear End Play
Courtesy of CHRYSLER MOTORS

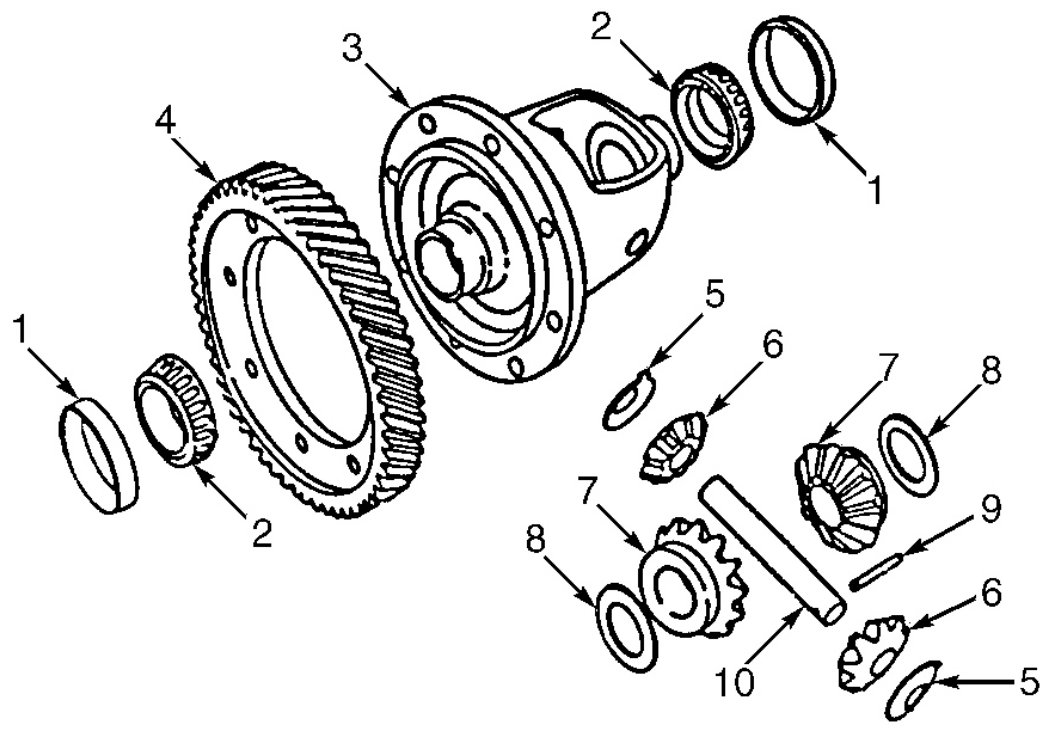


Fig. 17: Exploded View of Differential Assembly
Courtesy of CHRYSLER MOTORS

4. Side gear end play should be .001-.013: (.03-.33 mm). Repeat procedure on remaining side gear. If side gear end play is not within specification, 4 different thickness idle gear thrust washers are available.
5. Using hammer and punch, remove roll pin from carrier. See **Fig. 17** . Remove pinion gear shaft. Rotate pinion gears and remove pinion gears and thrust washers. Remove side gears and thrust washers.

Reassembly

1. To reassembly, reverse disassembly procedure. Recheck side gear end play once side gears and pinion gears are installed.
2. Install new ring gear bolts. **DO NOT** reuse ring gear bolts. Tighten ring gear bolts to specification. See **TORQUE SPECIFICATIONS** . Install new side bearings using press, Handle (C-4171) and Bearing Installer (L-4410).

ACCUMULATOR

Disassembly & Reassembly

Note location a accumulator. See **Fig. 18** . Remove snap ring, accumulator place, spring and accumulator piston. See **Fig. 6** . Remove seal rings from accumulator piston (if necessary). To reassembly, reverse disassembly procedure using new seal rings.

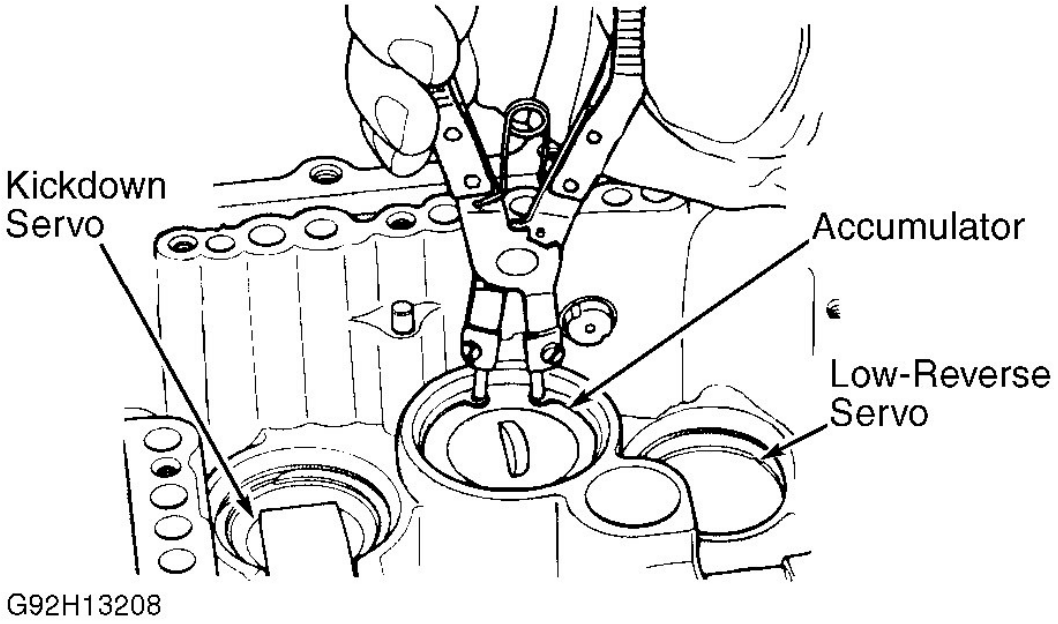


Fig. 18: Identifying Low-Reverse Servo, Accumulator & Kickdown Servo
Courtesy of CHRYSLER MOTORS

KICKDOWN SERVO

Disassembly & Reassembly

1. Note location of kickdown servo. See **Fig. 18** . Remove snap ring, kickdown servo guide, spring and kickdown servo piston. See **Fig. 6** .
2. Remove snap ring and separate piston rod from kickdown servo piston. Remove O-rings from piston rod and kickdown servo guide. Remove seal rings from kickdown servo piston. To reassemble, reverse disassembly procedure using new O-rings and seal rings.

LOW-REVERSE SERVO

Disassembly & Reassembly

Note location of low-reverse servo. See **Fig. 18** . Remove snap ring, low-reverse servo spring retainer, spring

and low-reverse servo piston. See **Fig. 6** . to reassembly, reverse disassembly procedure. Replace rubber seal ring on low-reverse servo piston (if necessary).

FRONT CLUTCH ASSEMBLY

CAUTION: Note direction of clutch discs and steel plates for reassembly reference and number of each components as some models may use a 3-disc or 4-disc clutch assembly. Components must be installed in correct sequence.

Disassembly

1. Using screwdriver, remove waved snap and reaction plate. See **Fig. 7** . remove clutch discs and clutch steel plates. See **Fig. 19** .
2. Using Spring Compressor (C-3575-A), compress spring and remove snap ring. See **Fig. 20** . Remove spring compressor. Remove spring retainer, spring and front clutch piston. See **Fig. 7** . Remove inner and outer seals (if necessary).

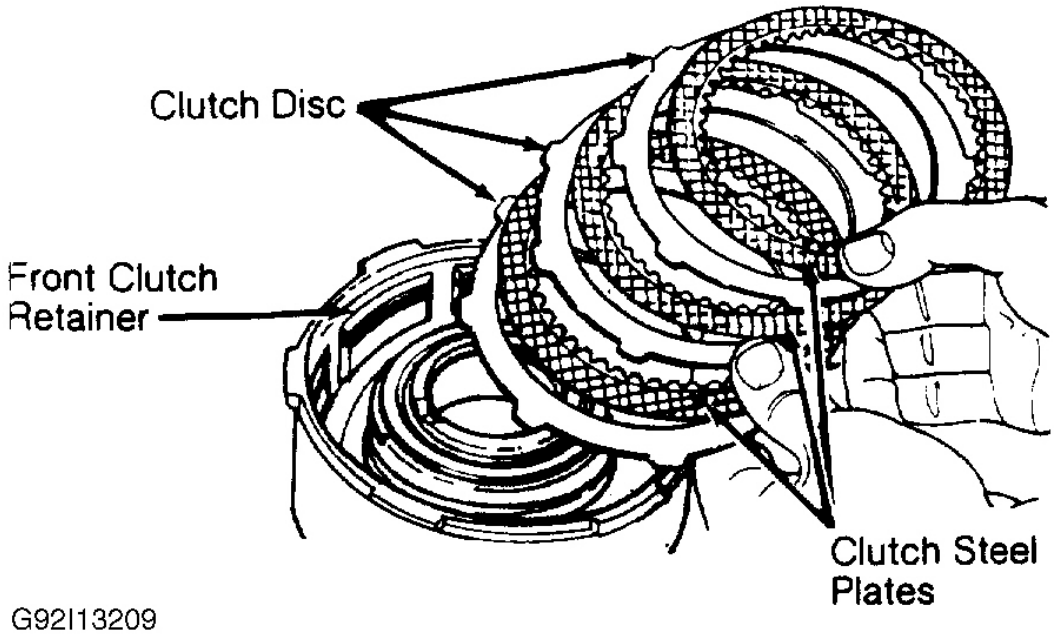


Fig. 19: Removing & Installing Front Clutch Discs & Steel Plates
Courtesy of CHRYSLER MOTORS

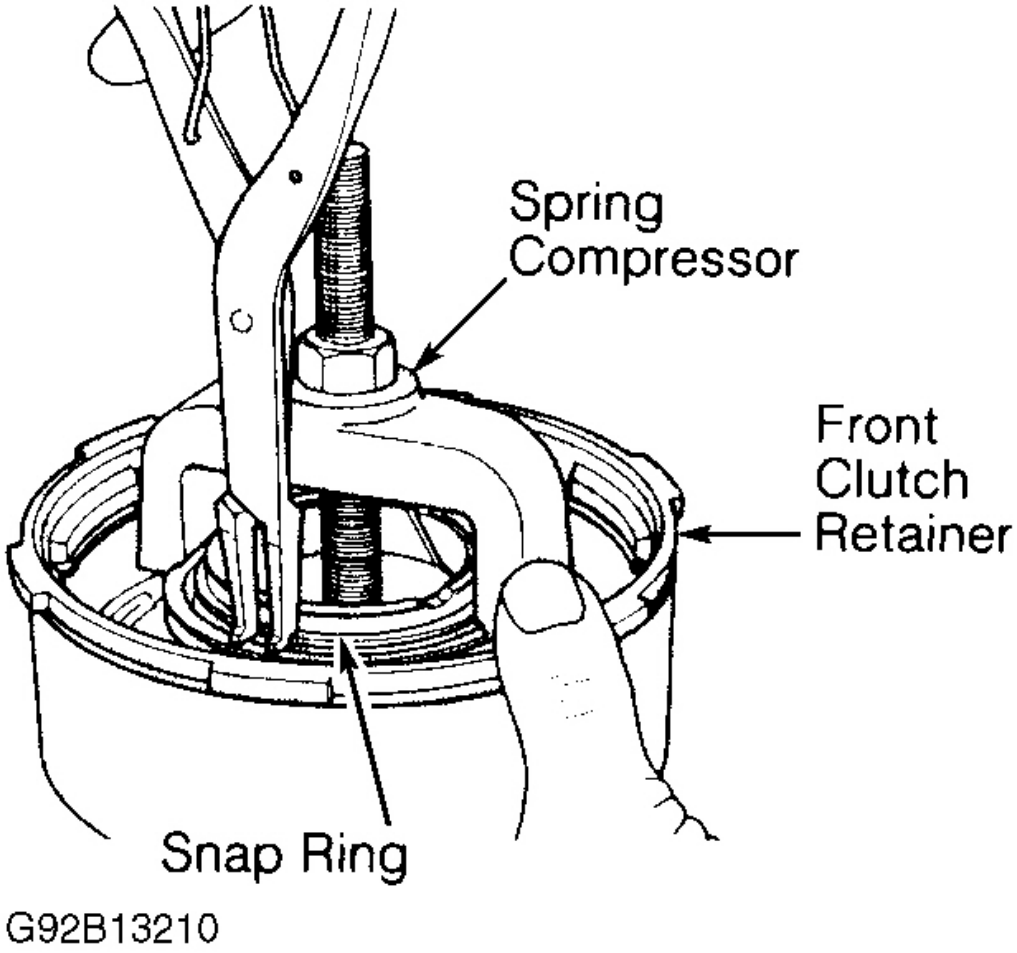


Fig. 20: Compressing Front Clutch Spring
Courtesy of CHRYSLER MOTORS

Inspection

1. Inspect clutch discs for flatness, flaking or glazing. Inspect clutch steel plates for flatness or damage at plate-to-front clutch retainer tang areas. Ensure tang areas in front clutch retainer are not damaged.
2. Check band-to-clutch retainer surface and front clutch surface for scoring. Ensure check ball in clutch retainer moves freely. Ensure all seal areas are smooth. check waved snap ring for distortion. Replace components if damaged.

Reassembly

1. Reinstall front clutch piston and components. Install clutch discs and clutch steel plates, starting with

clutch steel plate and alternating with a clutch disc. See **Fig. 19** .

2. Install reaction plate and waved snap ring. Using feeler gauge, measure front clutch clearance between reaction plate and edge of waved snap ring, farthest away from reaction plate. See **Fig. 21** .
3. Front clutch clearance should be .087-.133" (2.20-3.38 mm) on 3-disc clutches and .090-.146" (2.29-3.71 mm) on 4-disc clutches. Clutch is non-adjustable. If not within specification, check for defective or improperly assembled components.

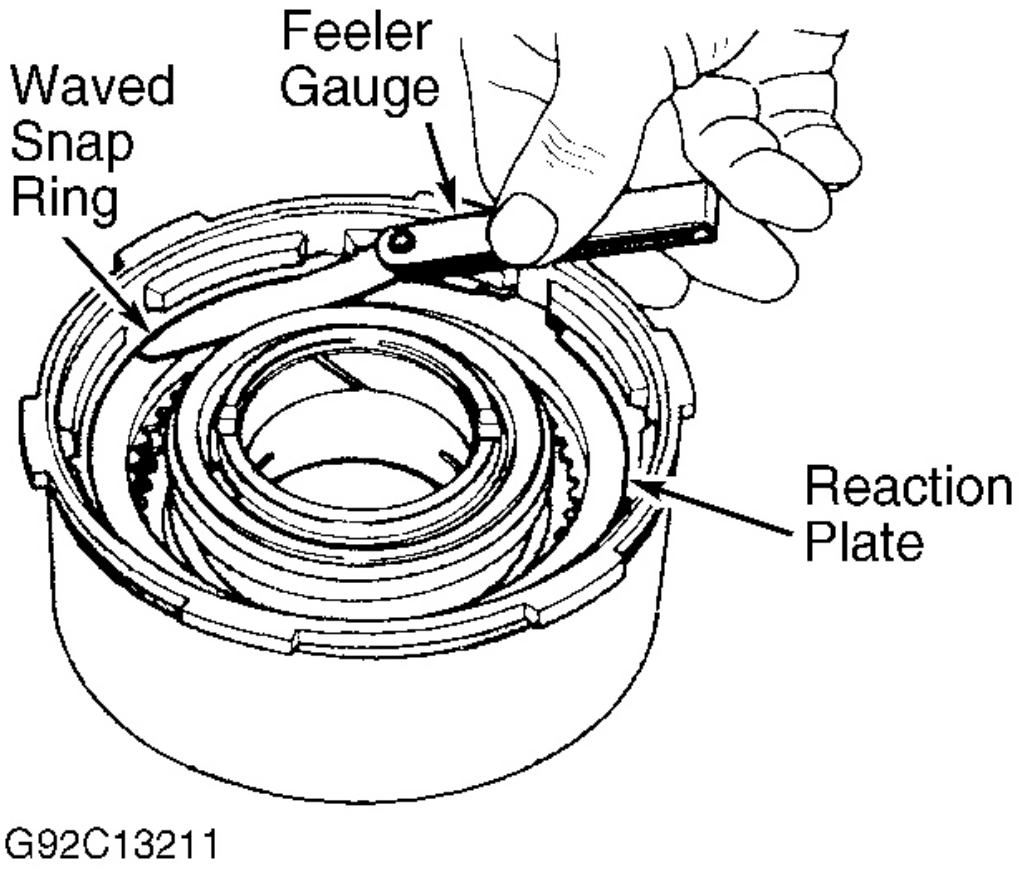


Fig. 21: Measuring Front Clutch Clearance
Courtesy of CHRYSLER MOTORS

REAR CLUTCH ASSEMBLY

CAUTION: Note direction of clutch discs and steel plates for reassembly reference and number of each components as some models may use a 3-disc or 4-disc clutch assembly. Components must be installed in correct sequence.

Disassembly

1. Remove selective snap ring from rear clutch retainer. Remove reaction plate, clutch discs and steel plates. See **Fig. 22** .
2. Remove waved snap ring, piston return spring and rear clutch piston. See **Fig. 7** . If necessary, remove seals from rear clutch piston. If removing input shaft, remove snap ring and press input shaft from rear clutch retainer.

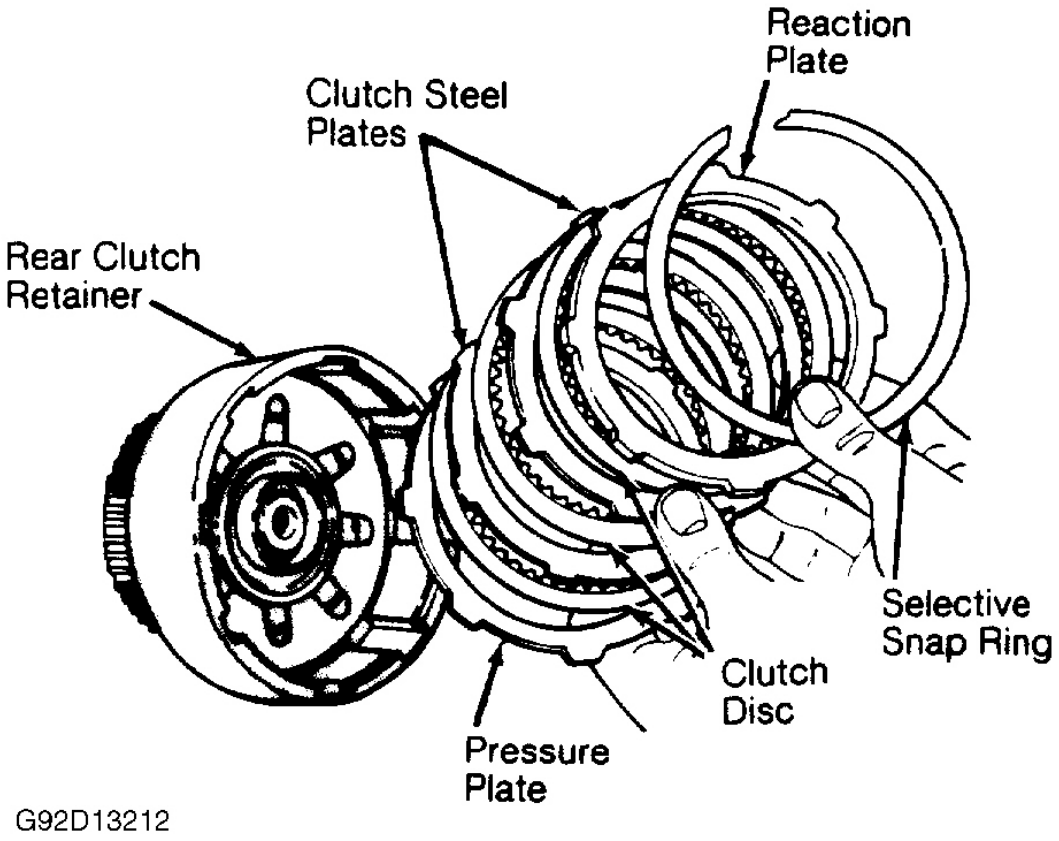


Fig. 22: Removing & Installing Rear Clutch Components
Courtesy of CHRYSLER MOTORS

Inspection

1. Inspect clutch discs for flatness, flaking or glazing. Inspect clutch steel plates and pressure plate for flatness or damage at plate-to-rear clutch retainer tang areas. Ensure tang areas in rear clutch retainer are not damaged.
2. Ensure check ball in clutch retainer moves freely. Ensure all seal areas are smooth. Check piston return spring and waved snap ring for distortion.
3. Inspect seal rings on input shaft for damage. **DO NOT** remove seal rings unless replacement is required.

Check thickness of thrust washer located between rear clutch and front clutch assembly. Replace thrust washer if thickness in not .061-.063" (1.55-1.60 mm). Replace components if damaged.

Reassembly

1. To reassemble, reverse disassembly procedure. Ensure components are installed with pressure plate and then a clutch disc, alternating with a steel clutch plate. See **Fig. 22** .
2. Install reaction plate and selective snap ring. Using feeler gauge, measure rear clutch clearance between reaction plate and selective snap ring. See **Fig. 23** .
3. Rear clutch clearance should be .026-.043" (.66-1.09 mm), regardless of number of clutch discs used. If rear clutch clearance is not within specification, install different thickness selective snap ring to obtain correct clearance.
4. Selective snap ring is available in thickness of .048-.050" (1.22-1.27 mm), .060-.062" (1.52-1.57 mm), .068-.070" (1.73-1.78 mm), .074-.076" (1.88-1.93 mm) and .087-.89" (2.21-2.26 mm).

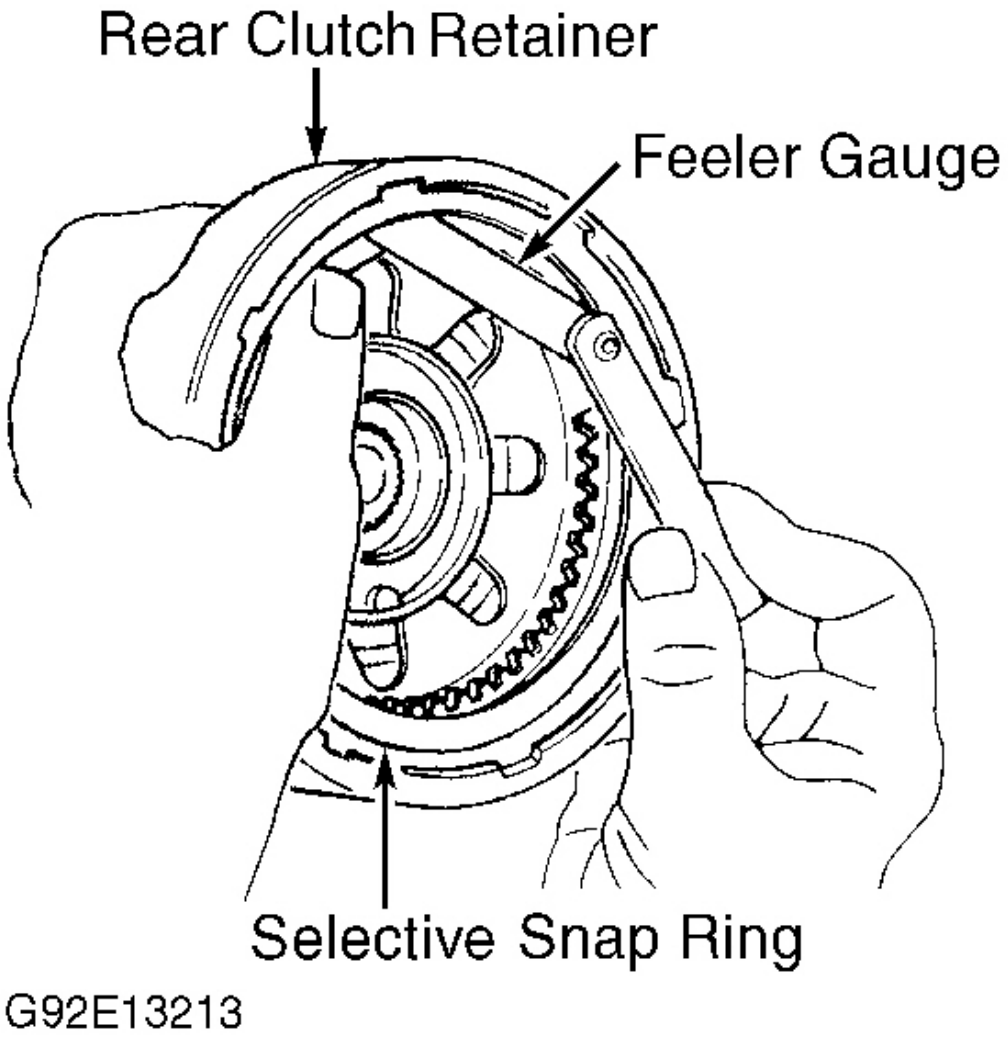


Fig. 23: Measuring Rear Clutch Clearance
Courtesy of CHRYSLER MOTORS

FRONT PLANETARY GEAR ASSEMBLY & FRONT ANNULUS GEAR

Disassembly & Reassembly

1. Remove snap ring retaining front planetary gear assembly in front annulus gear. Remove thrust washer located below snap ring. Separate front annulus gear from front planetary gear assembly. See **Fig. 7** .
2. Remove snap ring and front annulus gear support from front annulus gear. See **Fig. 7** . To reassembly, reverse disassembly procedure.

OIL PUMP

Disassembly

Remove retaining bolts and separate reaction shaft support from oil pump. See **Fig. 7** . Mark oil pump gear location for reassembly reference. Remove gears from pump body.

Cleaning & Inspection

1. Clean and inspect components for damage. Install both gears in oil pump. Using feeler gauge, measure outer gear-to-oil pump housing clearance.
2. Place staightedge on oil pump housing, above both gears. Using feeler gauge, measure gear side clearance between each gear and straightedge. Replace components if clearance is not within specification. See **OIL PUMP SPECIFICATIONS** .

OIL PUMP SPECIFICATIONS

Measurement	In. (mm)
Gear Side Clearance	.0008-.0018 (.020-.046)
Outer Gear-To-Oil Pump Housing Clearance	.0018-.0056 (.046-.142)

Reassembly

To reassemble, reverse disassembly procedure. Ensure components are installed in original location. tighten retaining bolts to specifications. See **TORQUE SPECIFICATIONS** .

VALVE BODY

CAUTION: For reassembly reference, place valve body components in order and mark spring locations when disassembling valve body. DO NOT use force to remove plugs from valve body.

Disassembly

1. Remove retaining screw and detent assembly from valve body. Using Socket (L-4553), remove valve body screws. Remove separator and transfer plates from valve body.

CAUTION: DO NOT allow check balls to fall from valve body when removing separator and transfer plates. Note position of 8 check balls in valve body for reassembly reference. See Fig. 24 .

2. Remove check balls from valve body. Remove snap ring or clip, washer and seal from end of manual throttle lever shaft. See **Fig. 6** .

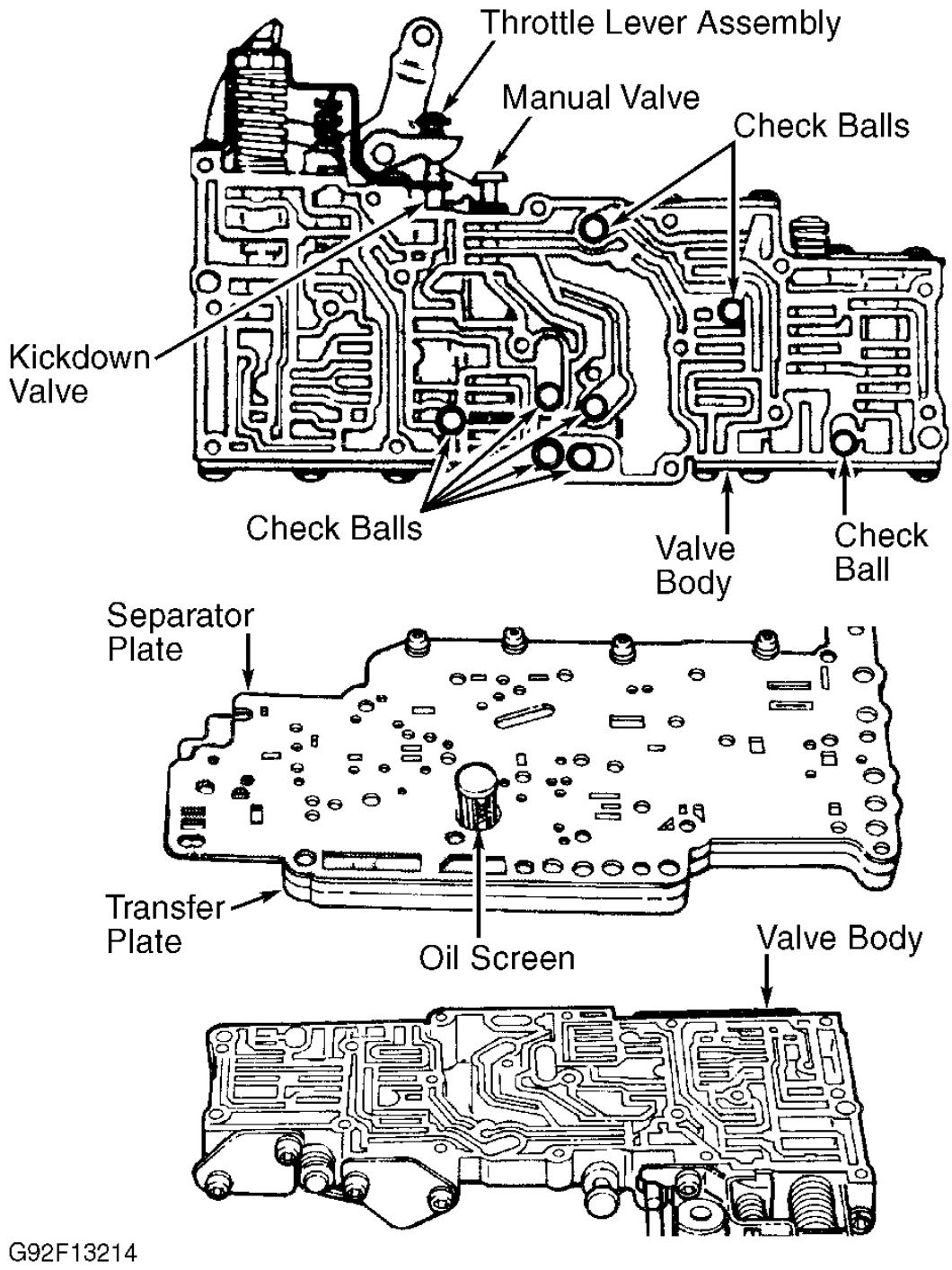
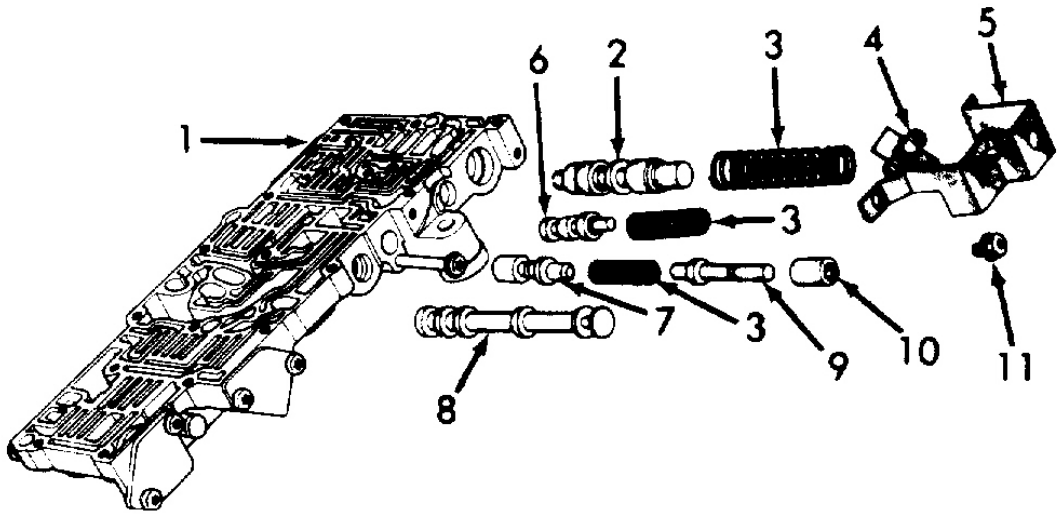


Fig. 24: Identifying Valve Body Check Ball Locations
Courtesy of CHRYSLER MOTORS



1. Valve Body
2. Line Pressure Valve
3. Spring
4. Line Pressure Adjusting Screw
5. Retainer Bracket
6. Pressure Regulator Valve
7. Throttle Valve
8. Manual Valve
9. Kickdown Valve
10. Guide
11. Throttle Pressure Adjusting Screw

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Fig. 25: Identifying Valve Body Manual Valve & Components
Courtesy of CHRYSLER MOTORS

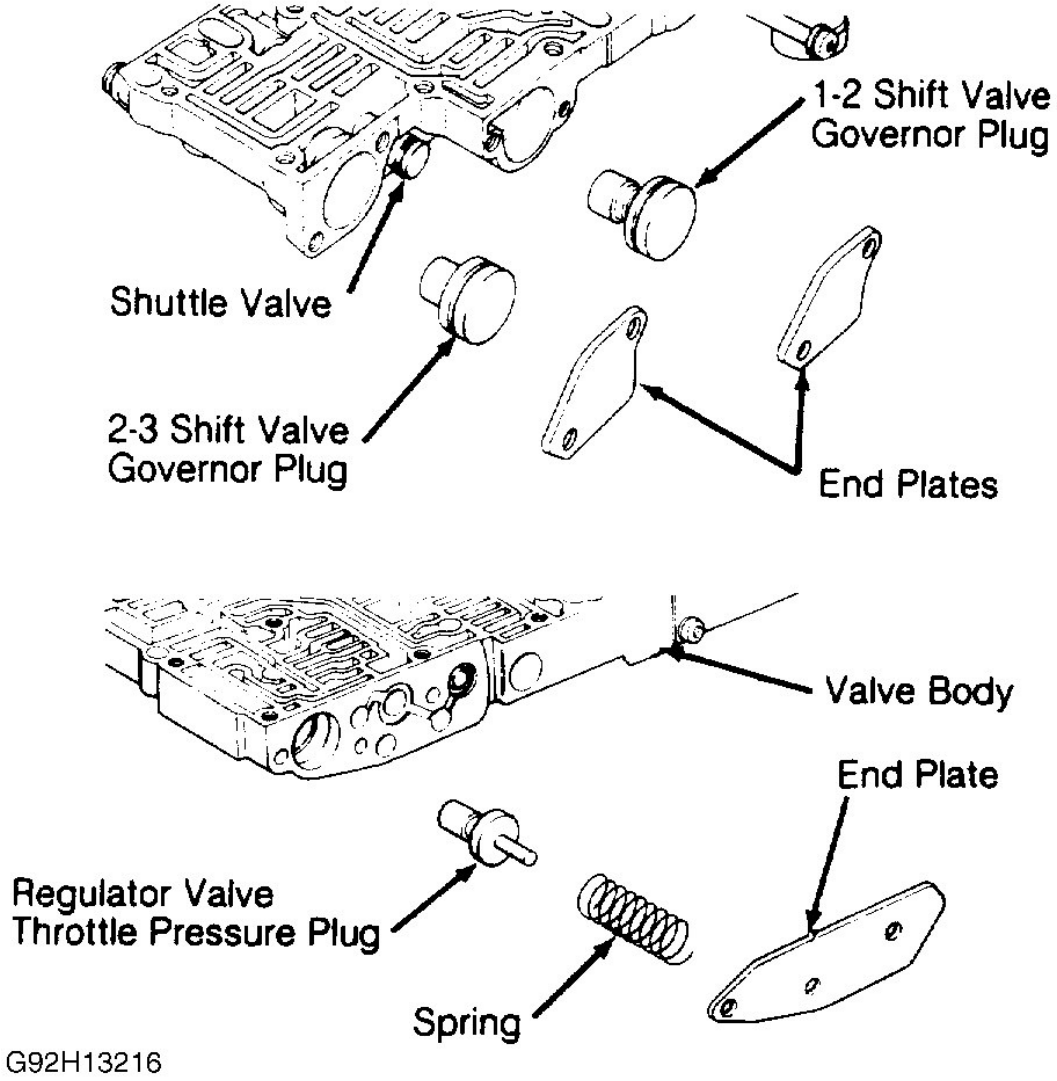
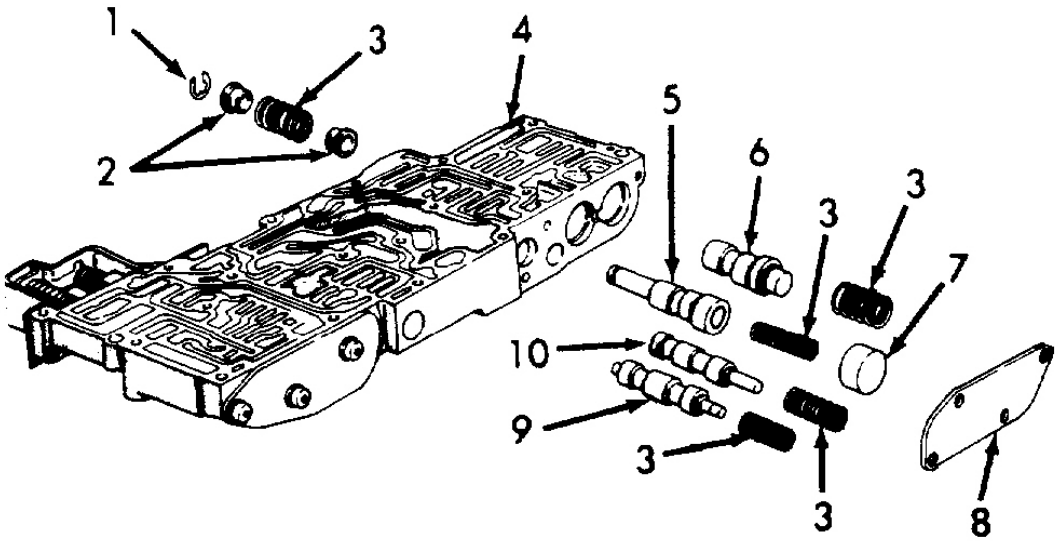


Fig. 26: Identifying Shift Valve Governor Plugs, Shuttle Valve & Regulator Valve Throttle Pressure Plug
Courtesy of CHRYSLER MOTORS



1. Clip
2. Spring Guides
3. Spring
4. Valve Body
5. Shuttle Valve
6. 2-3 Shift Valve
7. Shuttle Valve Plug
8. End Plate
9. 1-2 Shift Valve
10. By-Pass Valve

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Fig. 27: Identifying Valve Body Shift Valves
Courtesy of CHRYSLER MOTORS

3. Slide manual shift lever shaft from manual throttle lever shaft. Remove manual throttle lever shaft from valve body. Remove manual valve from valve body. See **Fig. 25** .
4. Remove retaining screws, retainer bracket and valves from valve body. See **Fig. 25** . Remove retaining screws, end plate governor plugs and shuttle valve. See **Fig. 26** .
5. Remove retaining screws, end plate, spring and regulator valve throttle pressure plug. See **Fig. 26** . Remove remaining end plate and components from valve body. See **Fig. 27** .

Cleaning & Inspection

Clean all components with solvent and dry with compressed air. Ensure all valves and plugs slide freely in the bore. Inspect all surfaces for burrs, nicks or scratches. Ensure springs are not distorted or collapsed. Replace components if damaged.

Reassembly

To reassemble, reverse disassembly procedure. Ensure components are installed in original location. Tighten valve body screws to specification. See **TORQUE SPECIFICATIONS** .

BEARING ADJUSTMENTS

DIFFERENTIAL BEARING PRELOAD

CAUTION: Differential bearing preload MUST be adjusted if any of the following components have been replaced: transaxle case, carrier, differential retainer, extension housing or side bearings and cups. Differential bearing preload must be checked with transfer shaft removed.

1. Install new side bearings on carrier using Handle (C-4171) and Bearing Installer (L-4410) if removed. using Bearing Cup Remover (L-4518), remove bearing cup from differential bearing retainer. See **Fig. 15** . Remove selective spacer or shim from differential bearing retainer. If side bearings have been replaced, also replace bearing cup in extension housing.
2. Install .020" (.50 mm) gauging shim in differential bearing retainer. **DO NOT** install oil baffle between gauging shim and differential bearing retainer at this time.
3. Using press, Handle (C-4171) and Bearing Cup Installer (L-4520), install bearing cup in differential bearing retainer. See **Fig. 15** .
4. Install differential assembly in transaxle case. Install new O-ring on extension housing. Apply 1/8" bead of RTV sealant on extension housing-to-transaxle case sealing surface. Install extension housing on transaxle case.
5. Using Spanner Wrench (L-4435), rotate extension housing and align retaining bolt holes. Install and tighten retaining bolts to specification. See **TORQUE SPECIFICATIONS** . Install differential bearing retainer and tighten retaining bolts to 21 ft. lbs. (29 N.m).

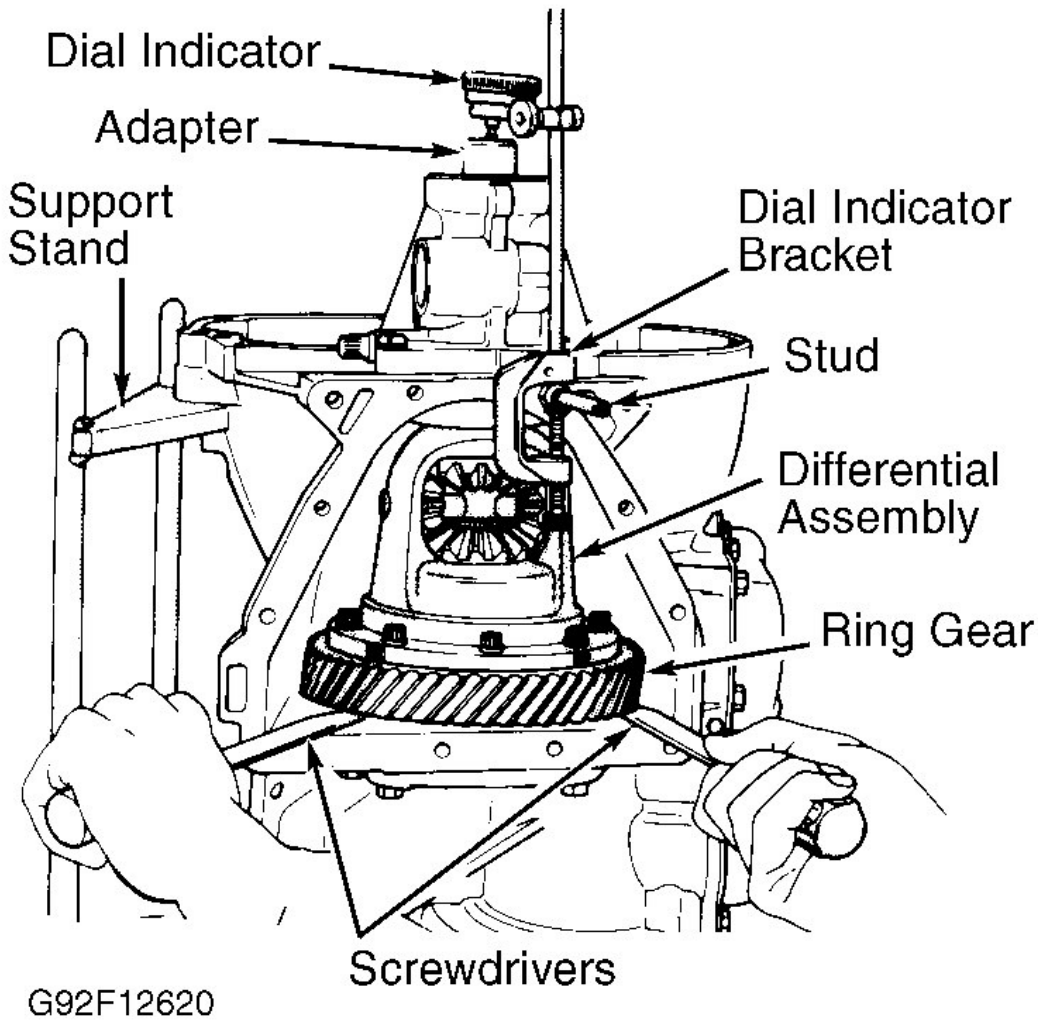

Fig. 28: Checking Differential End Play
Courtesy of CHRYSLER MOTORS

6. Position transaxle assembly vertically in Support Stand (L-4557). See **Fig. 28** . Rotate differential at least one full revolution to ensure side bearings are fully seated. Install Adapter (L-4336) into extension housing.
7. Install dial indicator with indicator stem resting on adapter and zero dial indicator. See **Fig. 28** . Using screwdrivers on each side of ring gear, pry ring gear upward and note differential end play reading on dial indicator.

CAUTION: DO NOT damage transaxle case or differential cover sealing surface when prying ring gear upward.

8. Using differential end play reading, determine selective spacer or shim to be required. See **Fig. 29** . Once proper selective spacer or shim is determined, remove retaining bolts and differential bearing retainer.

End Play (with .50 mm gauging shim installed)		Required Shim Combination	Total Thickness	
mm	inch	mm	mm	inch
.0	.0	.50	.50	.020
.05	.002	.75	.75	.030
.10	.004	.80	.80	.032
.15	.006	.85	.85	.034
.20	.008	.90	.90	.035
.25	.010	.95	.95	.037
.30	.012	1.00	1.00	.039
.35	.014	1.05	1.05	.041
.40	.016	.50 + .60	1.10	.043
.45	.018	.50 + .65	1.15	.045
.50	.020	.50 + .70	1.20	.047
.55	.022	.50 + .75	1.25	.049
.60	.024	.50 + .80	1.30	.051
.65	.026	.50 + .85	1.35	.053
.70	.027	.50 + .90	1.40	.055
.75	.029	.50 + .95	1.45	.057
.80	.031	.50 + 1.00	1.50	.059
.85	.033	.50 + 1.05	1.55	.061
.90	.035	1.00 + .60	1.60	.063
.95	.037	1.00 + .65	1.65	.065
1.00	.039	1.00 + .70	1.70	.067
1.05	.041	1.00 + .75	1.75	.069
1.10	.043	1.00 + .80	1.80	.071
1.15	.045	1.00 + .85	1.85	.073
1.20	.047	1.00 + .90	1.90	.075
1.25	.049	1.00 + .95	1.95	.077
1.30	.051	1.00 + 1.00	2.00	.079
1.35	.053	1.00 + 1.05	2.05	.081
1.40	.055	1.05 + 1.05	2.10	.083

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Fig. 29: Determining Differential End Play Selective Spacer or Shim
Courtesy of CHRYSLER MOTORS

9. Using bearing cup remover, remove bearing cup from differential bearing retainer. Remove .020" (.50 mm) gauging shim. Install oil baffle and proper selective spacer or shim.
10. Using press, handle and bearing race installer, install bearing cup in differential bearing retainer. Apply 1/8" bead or RTV sealant on differential bearing retainer-to-transaxle case sealing surface. Install differential bearing retainer on transaxle case.
11. Using Spanner Wrench (L-4435), rotate differential bearing retainer and align retaining bolt holes. Install and tighten retaining bolts to 21 ft. lbs. (29 N.m).

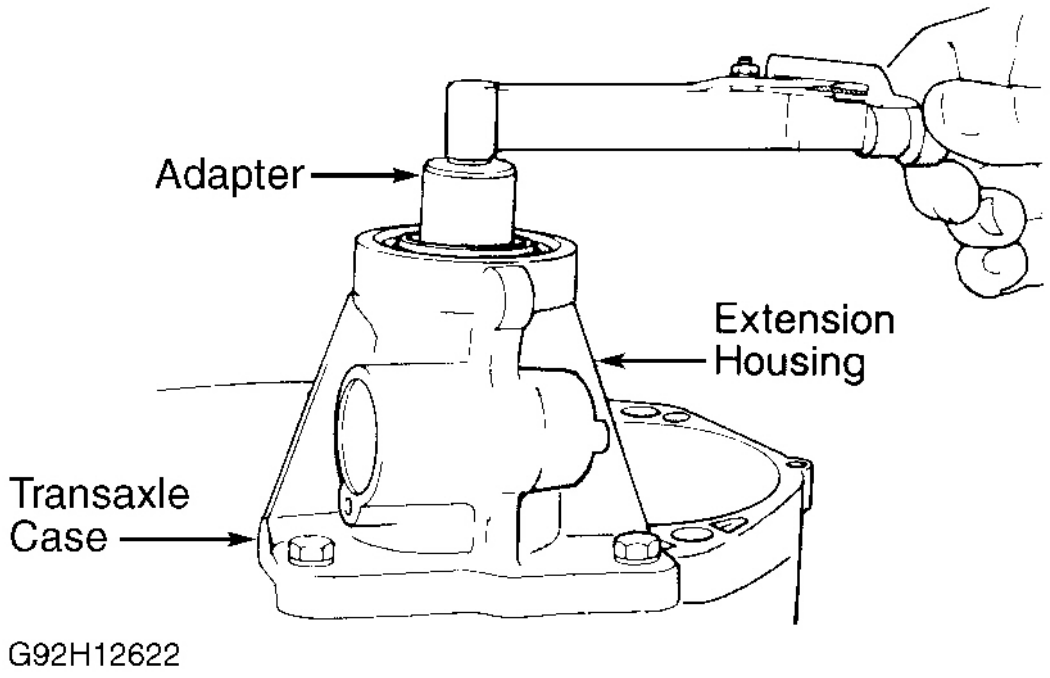

Fig. 30: Checking Differential Rotating Torque
Courtesy of CHRYSLER MOTORS

12. Coat side bearings with oil. Using Adapter (L-4436-A) and INCH lb. torque wrench, check differential rotating torque required to rotate differential assembly. See **Fig. 30** . Differential rotating torque should be 5-18 INCH lbs (.6-2.0 N.m).
13. If differential rotating torque exceeds specification, install a .002" (.05 mm) thinner selective spacer or shim in differential bearing retainer. Recheck differential rotating torque.
14. If oil seal was removed from extension housing, install new oil seal using Handle (C-4171) and Oil Seal Installer (L-4520).

OUTPUT SHAFT BEARING PRELOAD

CAUTION: Output shaft bearing preload must be checked when transaxle case, output shaft, rear annulus gear, output gear, bearings or bearing cups are replaced. Output gear bearing preload must be checked with transfer gear removed from transfer shaft.

1. With output gear and selective spacers or shims removed, install .537" (13.64 mm) and .053" (1.35 mm) gauging shims on hub of rear annulus gear, using grease to hold gauging shims in place. See **Fig. 31** .

NOTE: The .537" (13.64 mm) gauging shim has a larger inside diameter and must be installed over output shaft first. The .053" (1.35 mm) gauging shim fits on the output shaft.

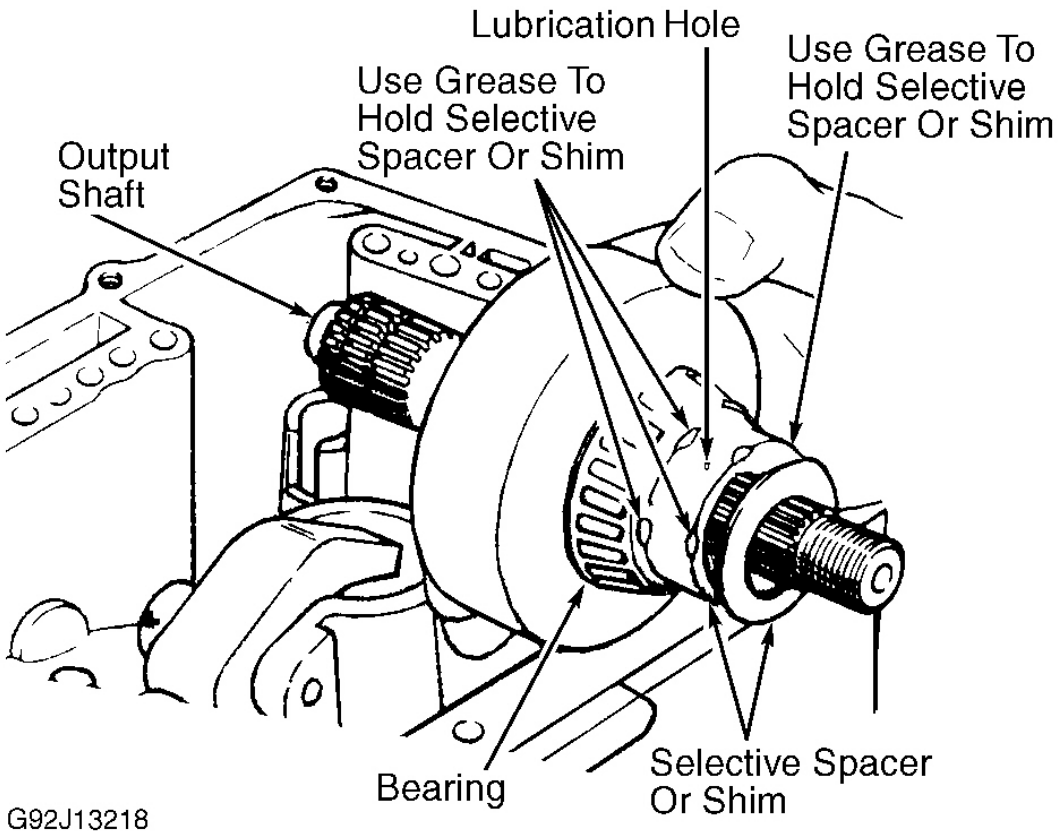

Fig. 31: Installing Output Shaft Assembly
Courtesy of CHRYSLER MOTORS

2. Install output shaft in transaxle case. Install output gear, washer and retaining nut. Using gear holder, hold output gear and tighten retaining nut to 200 ft. lbs. (271 N.m).
3. Attach Lever (L-4432) on output gear. Move output gear inward and outward while rotating back and forth to ensure bearings are seating. Mount steel ball in end of output shaft and retain in place with

grease. Install Adapter (L4438) and dial indicator with stem resting on steel ball. See **Fig. 32** .

4. Move output gear inward and zero dial indicator. Pull output gear outward and note output shaft end play. Using output shaft end play, determine proper selective shim or spacer. See **Fig. 33** .

NOTE: The .498" (12.65 mm), .518" (13.16 mm) and .537" (13.64 mm) selective shims or spacers are always installed first. These shims contain lubrication slots necessary for proper bearing lubrication.

5. Remove retaining nut, washer and output gear. Remove gauging shims. Install correct selective spacers or shims. Hold shims in place with grease. Reinstall output shaft gear, washer and retaining nut. Tighten retaining nut to 200 ft. lbs. (271 N.m).
6. Using INCH lb. torque wrench, check output shaft rotating torque. Output shaft rotating torque should be 3-8 INCH lbs. (.3-.9 N.m).
7. If output shaft rotating torque exceed specification, install a .002" (.05 mm) thicker selective spacer or shim. If output shaft rotating torque is less than specification, install a .002" (.05 mm) thinner selective spacer or shim. Recheck output shaft rotating torque.

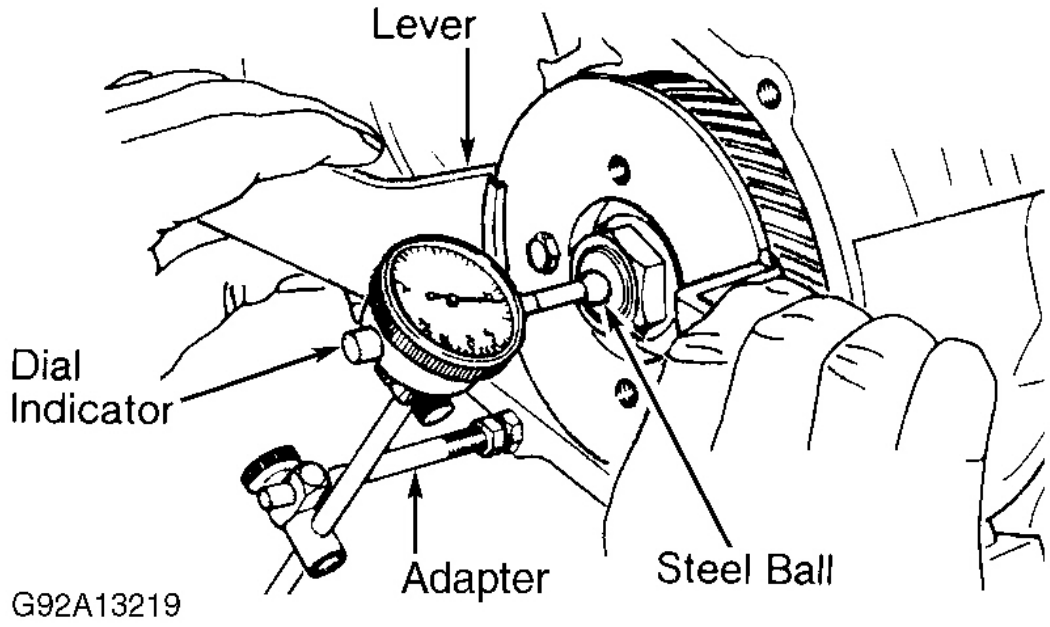

Fig. 32: Checking Output Shaft or Transfer Shaft End Play
Courtesy of CHRYSLER MOTORS

End Play (with 13.65mm and 1.34mm gauging shims Installed)		Required Shim Combination	Total Thickness	
mm	inch	mm	mm	inch
.0	.0	13.65 + 1.34	14.99	.590
.05	.002	13.65 + 1.24	14.89	.586
.10	.004	13.65 + 1.19	14.84	.584
.15	.006	13.65 + 1.14	14.79	.582
.20	.008	13.65 + 1.09	14.74	.580
.25	.010	13.65 + 1.04	14.69	.578
.30	.012	13.65 + .99	14.64	.576
.35	.014	13.65 + .94	14.59	.574
.40	.016	13.15 + 1.39	14.54	.572
.45	.018	13.15 + 1.34	14.49	.570
.50	.020	13.15 + 1.29	14.44	.568
.55	.022	13.15 + 1.24	14.39	.566
.60	.024	13.15 + 1.19	14.34	.564
.65	.026	13.15 + 1.14	14.29	.562
.70	.028	13.15 + 1.09	14.24	.560
.75	.030	13.15 + 1.04	14.19	.558
.80	.032	13.15 + .99	14.14	.556
.85	.034	13.15 + .94	14.09	.554
.90	.036	12.65 + 1.39	14.04	.552
.95	.038	12.65 + 1.34	13.99	.550
1.00	.040	12.65 + 1.29	13.94	.548
1.05	.042	12.65 + 1.24	13.89	.547
1.10	.044	12.65 + 1.19	13.84	.545
1.15	.046	12.65 + 1.14	13.79	.543
1.20	.048	12.65 + 1.09	13.74	.541
1.25	.049	12.65 + 1.04	13.69	.539
1.30	.051	12.65 + .99	13.64	.537
1.35	.053	12.65 + .94	13.59	.535

Average Conversion .05mm = .002"

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Fig. 33: Determining Output Gear Selective Spacers or Shims
Courtesy of CHRYSLER MOTORS

TRANSFER SHAFT BEARING PRELOAD

CAUTION: Transfer shaft bearing preload must be checked when bearings, bearing cups, governor support, governor support retainer, transaxle case, transfer gear, transfer shaft or transfer shaft bearing retainer are replaced.

1. Using gear holder, hold transfer gear and remove nut and washer from end of transfer shaft. Using Puller (L-4407), remove transfer gear and selective spacers or shims from transfer shaft.
2. Install a .090" (2.29 mm) and .055" (1.40 mm) gauging shims on transfer shaft behind governor support. Install transfer gear, washer and nut on transfer shaft. Using gear holder, hold transfer gear and tighten nut to 200 ft. lbs. (271 N.m).
3. Attach Lever (L-4432) on transfer gear. Move transfer gear inward and outward while rotating back and forth to ensure bearings are seated. Mount steel ball in end of transfer gear and retain in place with grease. Install Adapter (L-4438) and dial indicator with stem resting on steel ball. See **Fig. 32** .
4. Move transfer gear inward and zero dial indicator. Pull transfer gear upward and note transfer shaft end play reading on dial indicator.
5. Using transfer shaft end play, determine proper selective spacers or shims. See **Fig. 34** .

End Play (with 2.29 mm and 1.39 mm gauging shims installed)		Required Shim Combination	Total Thickness	
mm	inch	mm	mm	inch
.0	.0	2.29 + 1.39	3.68	.145
.05	.002	2.29 + 1.39	3.68	.145
.10	.004	2.29 + 1.39	3.68	.145
.15	.006	2.29 + 1.39	3.68	.145
.20	.008	2.29 + 1.34	3.63	.143
.25	.010	2.29 + 1.29	3.58	.141
.30	.012	2.29 + 1.24	3.53	.139
.35	.014	2.29 + 1.19	3.48	.137
.40	.016	2.29 + 1.14	3.43	.135
.45	.018	2.29 + 1.09	3.38	.133
.50	.020	2.29 + 1.04	3.33	.131
.55	.022	2.29 + .99	3.28	.129
.60	.024	1.84 + 1.39	3.23	.127
.65	.026	1.84 + 1.34	3.18	.125
.70	.028	1.84 + 1.29	3.13	.123
.75	.030	1.84 + 1.24	3.08	.121
.80	.032	1.84 + 1.19	3.03	.119
.85	.034	1.84 + 1.14	2.98	.117
.90	.036	1.84 + 1.09	2.93	.115
.95	.038	1.84 + 1.04	2.88	.113
1.00	.040	1.84 + .99	2.83	.111
1.05	.042	1.39 + 1.39	2.78	.109
1.10	.044	1.39 + 1.34	2.73	.107
1.15	.046	1.39 + 1.29	2.68	.105
1.20	.048	1.39 + 1.24	2.63	.103
1.25	.049	1.39 + 1.19	2.58	.101
1.30	.050	1.39 + 1.14	2.53	.099
1.35	.052	1.39 + 1.09	2.48	.097
1.40	.055	1.39 + 1.04	2.43	.095
1.45	.057	1.39 + .99	2.38	.093
1.50	.059	.94 + 1.39	2.33	.091
1.55	.061	.94 + 1.34	2.28	.089
1.60	.063	.94 + 1.29	2.23	.087

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Fig. 34: Determining Transfer Shaft Selective Spacers or Shims
Courtesy of CHRYSLER MOTORS

6. Using gear holder, hold transfer gear and remove nut and washer from end of transfer shaft. Using puller, remove transfer gear and gauging shims from transfer shaft.

7. Install proper selective spacers or shims on transfer shaft. Install transfer gear, washer and nut. Using gear holder, hold transfer gear and tighten nut to 200 ft. lbs. (271 N.m).
8. Ensure bearings are fully seated. Using dial indicator, check transfer shaft end play. Transfer shaft end play should be .002-.010" (.05-.25 mm).
9. If transfer shaft end play exceeds specification, install a .002" (.05 mm) thinner selective spacer or shim combination. If transfer shaft end play is less than specification, install a .002" (.05 mm) thicker selective spacer or shim combination. Recheck transfer shaft end play.

TRANSAXLE REASSEMBLY

NOTE: Coat all seal rings and O-rings with ATF or "door ease" lubricant before assembling.

DIFFERENTIAL ASSEMBLY

CAUTION: Differential bearing preload MUST be adjusting if any of the following components have been replaced: transaxle case, carrier, differential retainer, extension housing or side bearings and cups. See DIFFERENTIAL BEARING PRELOAD under BEARING ADJUSTMENTS. If no components are replaced, use original selective spacer or shim located behind bearing cup in differential bearing retainer.

1. Install differential assembly in transaxle case. Install new O-ring on extension housing. Apply 1/8" bead of RTV sealant on extension housing-to-transaxle case sealing surface. Install extension housing on transaxle case.
2. Using Spanner Wrench (L-4435), rotate extension housing and align retaining bolt holes. Install and tighten retaining bolts to specification. See **TORQUE SPECIFICATIONS** .
3. Apply 1/8" bead of RTV sealant on differential bearing retainer-to-transaxle case sealing surface. Install differential bearing retainer on transaxle case.
4. Using spanner wrench, rotate differential bearing retainer and align retaining bolt holes. Install and tighten retaining bolts to specification. See **TORQUE SPECIFICATIONS** .
5. Apply 1/8" bead of RTV sealing on differential cover-to-transaxle case sealing surface. Install differential cover and retaining bolts. Tighten retaining bolts to specification. See **TORQUE SPECIFICATIONS** .
6. If installing oil seal in extension housing, use Handle (C-4171) and Oil Seal Installer (L-4520).

TRANSFER SHAFT & TRANSFER GEAR

CAUTION: If bearings, bearing cups, governor support, governor support retainer, transaxle case, transfer gear, transfer shaft or transfer shaft bearing retainer are replaced, transfer shaft bearing preload must be checked. See TRANSFER SHAFT BEARING PRELOAD under BEARING ADJUSTMENTS.

1. If installing new bearing on transfer shaft, use press and Bearing Installer (L-4411) to install bearing. If installing new bearing cup in transfer shaft bearing retainer, use press, Handle (C-4171) and Bearing Cup

Installer (L-4520). See **Fig. 13** .

2. If installing new bearing on transfer gear, use press, Handle (C-4171) and Adapter (L-4410) to install baring. See **Fig. 11** .
3. Install transfer shaft bearing retainer on transfer shaft. Install new O-ring on transfer shaft bearing retainer. Using transfer shaft remover/installer, install transfer shaft. See **Fig. 9** .
4. Install transfer shaft retaining snap ring. Install governor support with governor assembly. Install low-reverse band anchor pin, located at rear of transaxle, near transfer gear. See **Fig. 9** .
5. If installing new bearing cup in governor support retainer, use press, Handle (C-4171) and Bearing Cup Installer (L-4520). Install governor support retainer.
6. Install selective spacer or shim, transfer gear, washer and nut on transfer shaft. Using gear holder, hold transfer gear and tighten nut to specification. See **TORQUE SPECIFICATIONS** .

VALVE BODY & INTERNAL COMPONENTS

CAUTION: If transaxle case, output shaft, rear annulus gear, output gear, bearings or bearing cups are replaced, output gear bearing preload must be checked. See OUTPUT SHAFT BEARING PRELOAD under BEARING ADJUSTMENTS.

1. If installing new bearing on output gear, use press, Handle (C-4171) and Adapter (L-4408) to install bearing. See **Fig. 11** . If installing new rear annulus gear bearing cup, use Bearing Cup Installer (L-4429-3). See **Fig. 10** .

NOTE: Bearing cup installer used for rear planetary annulus gear bearing cup can also be used to install output shaft gear bearing cup in transaxle case.

2. If installing new bearing on rear annulus gear, use press. Bearing Installer (C-4637) and cup from Adapter (L-4518) to install bearing. See **Fig. 14** .
3. Install output shaft assembly and selective spacers or shims using grease to retain selective spacers or shims in place. See **Fig. 31** . Install output gear, washer and retaining nut. Using gear holder, hold output gear and tighten retaining nut to specification. See **TORQUE SPECIFICATIONS** .
4. Install parking pawl, return spring and parking pawl shaft. Install parking rod support and retaining bolts. Tighten retaining bolts to specification. See **TORQUE SPECIFICATIONS** .
5. Apply 1/8" bead of RTV sealant on end cover and install. Tighten retaining bolts to specification. See **TORQUE SPECIFICATIONS** .
6. Using Spacer (L-4440), install overrunning clutch rollers and springs in overrunning clutch assembly. See **Fig. 35** .

CAUTION: Ensure 8 springs and 8 rollers are installed in overrunning clutch with spring facing the proper direction. See Fig. 35 .

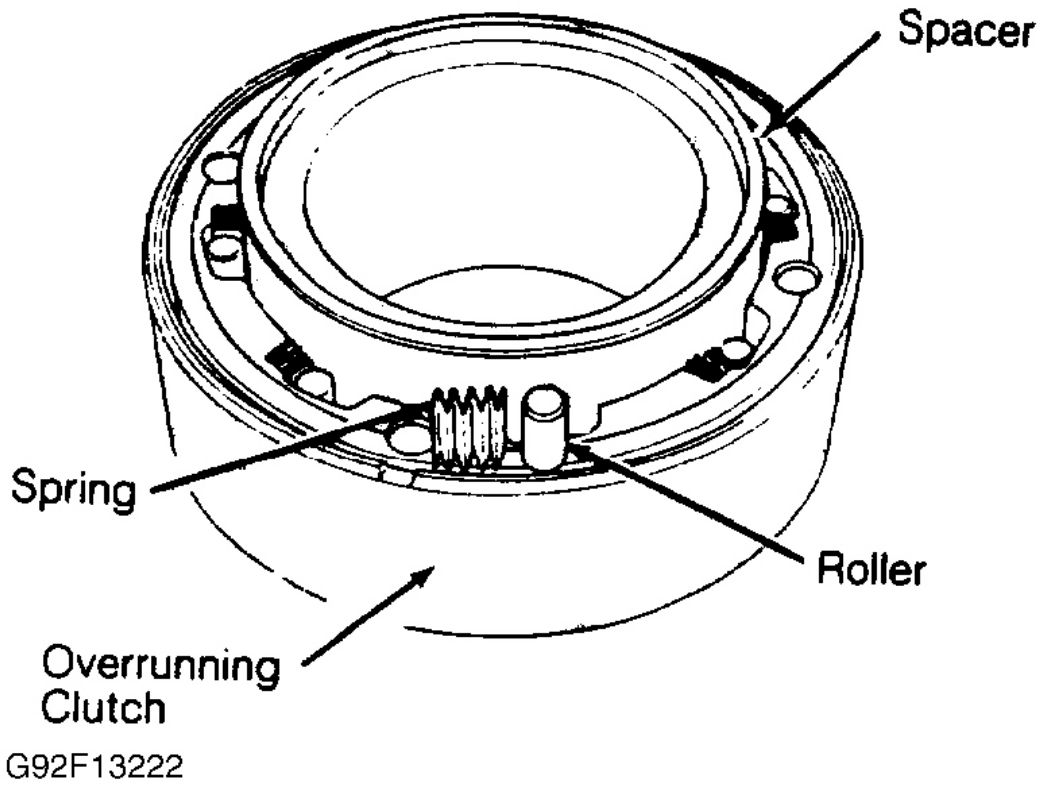

Fig. 35: Installing Overrunning Clutch Rollers & Springs
Courtesy of CHRYSLER MOTORS

7. Install thrust washer in transaxle case and over rear annulus gear. Install low-reverse band and strut. Install overrunning clutch assembly.
8. Install thrust washer and rear planetary gear assembly in rear annulus gear. Install thrust washer on front of rear planetary gear assembly. Install sun gear shell with sun gear, thrust plate and plate spacer. See **Fig. 7** .
9. Install thrust washer and front planetary gear assembly with front annulus gear in sun gear shell. Install snap ring in output shaft to hold front planetary gear assembly in position.
10. Install thrust washer on end of output shaft. This is the selective thrust washer located between output shaft and input shaft and used for controlling input shaft end play.
11. Install rear clutch assembly. Install thrust washer over input shaft and on front of rear clutch retainer. Install front clutch assembly. Install kickdown band and strut. Ensure kickdown band adjusting screw is loose.
12. Install oil pump gasket in transaxle case. Ensure all holes in gasket align with holes in transaxle case. Install thrust washer on rear of oil pump.
13. **DO NOT** install seal rings on oil pump at this time. Install oil pump and retaining bolts. Tighten oil pump retaining bolts to specification. See **TORQUE SPECIFICATIONS** .

14. Using dial indicator, check input shaft end play. Input shaft end play should be .008-.060" (.20-1.52 mm). If input shaft end play is not within specification, change selective thrust washer located between output shaft and input shaft. Selective thrust washer is available in 3 different thicknesses.
15. Once proper input shaft end play is obtained, remove oil pump and gasket. Install seal rings on oil pump. Install gasket and oil pump. Tighten oil pump-to-transaxle case bolts to specification. See **TORQUE SPECIFICATIONS** . Ensure input shaft rotates smoothly.
16. Using Seal Installer (C-4193), install new seal in oil pump (if removed). Install kickdown servo, accumulator and low-reverse servo components.
17. To adjust kickdown band (front band), ensure kickdown band adjusting screw located on top of transaxle is backed off at least 5 turns. See **Fig. 1** . Ensure adjusting screw rotates freely in transaxle case.
18. Using Wrench (C-3880-A) and Adapter (C-3705), tighten kickdown band adjusting screw to 47-50 INCH lbs. (5.3-5.6 N.m).

NOTE: When adjusting kickdown band, if adapter is not being used, tighten kickdown band adjusting screw to 72 INCH lbs. (8.1 N.m).

19. Back off kickdown band adjusting screw 2 1/2 turn and tighten lock nut to 35 ft. lbs. (47 N.m).
20. To adjust low-reverse band (rear band), ensure low-reverse band adjusting screw located inside transaxle case is backed off at least 5 turns. See **Fig. 8** . Ensure adjusting screw rotates freely in transaxle case.
21. Using INCH lb. torque wrench, tighten low-reverse band adjusting screw to 41 INCH lbs. (4.6 N.m). Back off low-reverse band adjusting screw 3 1/2 turn and tighten lock nut to 10 ft. lbs. (14 N.m).
22. Install valve body. See **VALVE BODY** under REMOVAL & INSTALLATION.

CAUTION: If transaxle failure existed, flush oil cooler and check oil cooler flow. See OIL COOLER FLUSHING and OIL COOLER FLOW CHECK under ON-VEHICLE SERVICE.

TORQUE SPECIFICATIONS

TORQUE SPECIFICATIONS

Application	Ft. Lbs. (N.m)
Differential Bearing Retainer Bolt	21 (28)
Differential Cover Bolt	14 (19)
End Cover Bolt	14 (19)
Extension Housing Bolt	21 (28)
Governor Counterweight Bolt	21 (29)
Kickdown Band Adjusting Screw Lock Nut	35 (47)
Low-Reverse Band Adjusting Screw Lock Nut	10 (14)
Neutral Start/Back-Up Light Switch	25 (34)
Oil Pan Bolt	14 (19)
Oil Pump-to-Transaxle Case Bolt	23 (31)
Parking Rod Support Bolt	21 (28)

Reaction Shaft Support Bolt	21 (28)
Ring Gear Bolt (1)	70 (95)
Transfer/Output Gear Bolt/Nut	200 (271)
	INCH Lbs. (N.m)
Distance Sensor Bolt	60 (7)
Filter Assembly Screw	40 (4)
Governor Assembly-To-Governor Support Bolt	60 (7)
Pressure Tap Plug	45 (5)
Transfer Plate-To-Transaxle Case Bolt	40 (4)
Transfer Plate & Valve Body Screw	40 (4)
(1) Always use NEW bolts. **DO NOT** reuse old bolts.	

TRANSAXLE SPECIFICATIONS

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Application	Specification
Clutch Clearances	
Front Clutch - 3-Disc Clutch	.087-.133" (2.21-3.38 mm)
Front Clutch - 4-Disc Clutch	.090-.146" (2.29-3.71 mm)
Rear Clutch	.026-.043" (.66-1.09 mm)
Differential Rotating Torque	5-18 INCH lbs. (.6-2 N.m)
Differential Side	
Gear End Play	.001-.013" (.03-.33 mm)
Input Shaft End Play	.008-.060" (.20-1.52 mm)
Oil Pump Clearances	
Gear Side Clearance	.0008-.0018" (.020-.046 mm)
Outer Gear-To-Oil Pump Housing Clearance	.0018-.0056" (.046-.142 mm)
Output Shaft Rotating Torque	3-8 INCH lbs. (.3-.9 N.m)
Transfer Shaft End Play	.002-.010" (.05-.25 mm)